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# Entrepreneurial orientation, dynamic capabilities and SMEs performance in Saudi Arabia

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# Copyright statement

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# Entrepreneurial orientation, dynamic capabilities and SMEs performance in Saudi Arabia

by

**Mohammed Fahad Albasri**

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in partial fulfilment for the degree of

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# Dedication

*To my God Allah Almighty.*

*To my mother and father.*

*To my wife and daughters*

*The soul of Dr Ibrahim El-Beltagi*

## Author's Declaration

'At no time during the registration for the degree of Doctor of Philosophy has the author been registered for any other University award without prior agreement of the Doctoral College Quality Sub-Committee.

Work submitted for this research degree at the University of Plymouth has not formed part of any other degree either at the University of Plymouth or at another establishment. '

## Working Papers

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# Entrepreneurial orientation, dynamic capabilities and SMEs performance in Saudi Arabia

**Mohammed Albasri**

## Abstract

The study aims to explore the role of entrepreneurial orientation coupled with three dynamic capabilities in enhancing the performance of small and medium-sized enterprises (SMEs) in Saudi Arabia. In order to achieve this aim, three main objectives have been set, firstly, to examine separately the relationship between innovativeness, proactiveness, and risk-taking on dynamic capabilities. Secondly, to investigate the direct influence of Dynamic Capability (DC) dimensions on firm performance. Finally, to examine the mediating role of explorative, exploitative, reconfiguration capabilities on the relationship between EO and firm performance.

The study adopts a positivist philosophy, a deductive approach with a quantitative method, and uses a questionnaire to gather data from Saudi SMEs. This study has conducted an extensive literature review to evaluate the taxonomy of EO and firm performance and identify relevant measurements items of EO dimensions, explorative capabilities, exploitive capabilities, reconfiguration capabilities, and firm performance. Before proceeding to examine the hypotheses, the study followed several data examination processes. These are reliability and validity tests of the constructs, and measurement model tests by confirmatory factor analysis. Once confirmed the reliability and validity issues of the measurement model, the study addressed structural equation model test to analyse the proposed hypotheses with an actual sample size 392 of SMEs with a response rate of 50%. To examine the conceptual model, the

study used SEM with Warp PLS 6 statistical package for eliciting the causal relationships among the constructs.

The findings indicate that the entrepreneurial orientation, exploring, exploiting, and reconfiguration capabilities jointly have a positive effect on performance. However, the findings show that dynamic capability only partially mediates the respective effects of entrepreneurial orientation on performance. These results provide convincing support for the importance of dynamic capability in enhancing firm performance.

The study contributes to the body of knowledge by providing a better understanding the nature of the relationship between EO and firm performance through DC. The study suggests that SMEs need to allocate their investments in resources and capabilities to attain a competitive advantage. The empirical findings will be of interest to managers and practitioners in SMEs, helping them to utilise their resources and capabilities effectively.

# List of Abbreviations

| Abbreviations | Full Term |
|---|---|
| **CE** | Corporate Entrepreneurship |
| **DC** | Dynamic Capabilities |
| **EO** | Entrepreneurial Orientation |
| **EXP** | Exploration |
| **EXPT** | Exploitation |
| **OL** | Organisational Learning |
| **GCC** | Gulf Cooperation Council |
| **INN** | Innovativeness |
| **KSA** | Kingdom of Saudi Arabia |
| **PLS** | Partial Least Squares |
| **PRO** | Reactiveness |
| **RBV** | Resource-Based View |
| **REC** | Reconfiguration |
| **RSK** | Risk Taking |
| **SEM** | Structural Equation Modelling |

# Table of contents

**Copyright statement** ..... **1**
**Acknowledgements** ..... **3**
**Dedication** ..... **4**
**Author's Declaration** ..... **5**
**Abstract** ..... **7**
**List of Abbreviations** ..... **9**
**Table of contents** ..... **10**
**List of Figures and tables** ..... **15**
**1 CHAPTER ONE: INTRODUCTION** ..... **16**
1.1 Introduction ..... 16
1.2 Research Background ..... 16
1.3 Theoretical Background ..... 20
1.4 Research Context ..... 23
1.4.1 Population ..... 23
1.4.2 Economy ..... 23
1.4.3 SEMs in Vision 2030 ..... 24
1.5 Study Motivation ..... 29
1.6 Research Aim, Objectives and Questions ..... 31
1.7 Research Methodology ..... 32
1.8 Research Rational and Significance ..... 32
1.9 Originality and Contributions ..... 34
1.10 Thesis Structure ..... 38
1.11 Summary ..... 40
**2 CHAPTER TWO: LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT** ..... **41**
2.1 Introduction ..... 41
2.2 Definitions and Concepts ..... 41
2.2.1 Entrepreneurship ..... 41
2.2.2 Entrepreneurs ..... 43
2.2.3 Entrepreneurial Orientation ..... 46
2.2.4 Entrepreneurial Orientation Dimensions ..... 48
2.2.4.1 Innovativeness ..... 49

2.2.4.2 Proactiveness ..... 52
2.2.4.3 Risk Taking ..... 55
2.2.5 Dynamic Capabilities ..... 57
2.2.5.1 Exploration ..... 57
2.2.5.2 Exploitation ..... 58
2.2.5.3 Reconfiguration ..... 59
2.2.6 Firm Performance and Entrepreneurship Orientation ..... 60
2.3 Theories ..... 63
2.3.1 Resource Based View (RBV) ..... 63
2.3.2 Dynamic Capabilities (DCs) ..... 66
2.4. Conceptual Framework ..... 71
2.4.1 Development of the Conceptual Framework ..... 72
2.4.2 The Influence of EO Dimensions on Exploring Capabilities, Exploiting Capabilities, and Reconfiguration Capabilities ..... 76
2.4.2.1 Innovativeness ..... 76
2.4.2.2 Proactiveness ..... 77
2.4.2.3 Risk-taking ..... 77
2.4.3 The Influence of Exploring Capabilities, Exploiting Capabilities, Reconfiguration Capabilities on Firm Performance ..... 79
2.4.3.1 Exploration ..... 79
2.4.3.2 Exploitation ..... 80
2.4.3.3 Reconfiguration ..... 81
2.4.4 The Influence of EO Dimensions on Firm Performance ..... 82
2.4.4.1 Innovativeness ..... 82
2.4.4.2 Proactiveness ..... 83
2.4.4.3 Risk-taking ..... 83
2.5 The Research Hypotheses (the Research Model) ..... 84
2.5.1 The relationship between innovativeness and explorative capabilities ..... 85
2.5.2 The relationship between innovativeness and exploitation capabilities ..... 87

2.5.3 The relationship between innovativeness and reconfiguration capability. ..... 89
2.5.4 The relationship between proactiveness and explorative capability. ..... 91
2.5.5 The relationship between Proactiveness and exploitation capability. ..... 92
2.5.6 The relationship between proactiveness and reconfiguration capability. ..... 94
2.5.7 The relationship between risk taking and exploration capability. ..... 95
2.5.8 The relationship between risk taking and exploitation capability. ..... 97
2.5.9 The relationship between risk taking and reconfiguration capability ..... 99
2.5.10 The relationship between exploration capability and performance. ..... 100
2.5.11 The relationship between exploitation capability and performance. ..... 101
2.5.12 the relationship between reconfiguration capability and performance. ..... 102
2.5.13 The mediating effect of exploration capability in the EO - Performance Relationship ..... 104
2.5.14 The Mediating Effect of exploitation capability in the EO - Performance Relationship ..... 105
2.5.15 The Mediating Effect of reconfiguration capability in the EO - Performance Relationship ..... 107
2.6 Summary ..... 110
**3 CHAPTER THREE: Research Methodology ..... 111**
3.1 Introduction ..... 111
3.2 Research Questions ..... 112
3.3 Research philosophy ..... 113
3.4 Research approach ..... 119
3.5 Research Design ..... 121
3.6 Quantitative Research Methods ..... 122
3.7 Research Strategy ..... 123
3.7.1 Experiment ..... 124
3.7.2 Survey ..... 124
3.7.3 Case Study ..... 124
3.7.4 Surveys as the chosen research strategy ..... 125
3.8 Questionnaire survey ..... 125

3.8.1 Questionnaire Design ..... 125
3.8.2 Questionnaire layout ..... 127
3.9 Sampling Design ..... 131
3.9.1 Target Population ..... 131
3.9.2 Sample Frame ..... 131
3.9.3 Sample Method ..... 132
3.9.4 Sampling Unit ..... 133
3.9.5 Sample Size ..... 134
3.10 Analysis Techniques used for the study. ..... 135
3.11 Ethical Considerations ..... 138
3.12 Piloting the Survey ..... 140
3.12.1 Content Validity ..... 140
3.12.2 Questionnaire translation ..... 141
3.12.3 Pilot Construct validity ..... 142
3.12.4 Reliability statistics ..... 143
3.13 Data Preparation and Collection Process ..... 147
3.14 Summary ..... 149
**4 CHAPTER FOUR: FINDINGS AND DISCUSSION ..... 150**
4.0 Introduction ..... 150
4.1 Findings ..... 150
4.1.1 Pre-analysis Data Processing ..... 150
4.1.1.1 Data Coding ..... 150
4.1.1.2 Data Cleaning and Screening ..... 151
4.1.1.3 Assessing Non-Response Bias ..... 153
4.1.1.4 Common Method Bias ..... 154
4.1.2 Descriptive statistics ..... 155
4.1.3 Structural Equation Modelling ..... 156
4.1.3.1. The Measurement Model ..... 158
4.1.2 Assessing the Structural Model ..... 163

4.1.3 Results Overview ..... 164
4.1.4 Mediation Test ..... 169
4.2 Discussion ..... 172
4.2.1 Overview of the Study ..... 172
4.2.2 The relationships ..... 175
4.3 Summary ..... 193
**5 CHAPTER FIVE: CONCLUSION ..... 194**
5.1 Research Questions conclusion ..... 194
5.2 Main Conclusions ..... 195
5.3 Contribution and implication ..... 198
5.3.1 Theoretical Implications ..... 198
5.3.2 Implications for policy makers and managers ..... 202
5.4 Limitations and future research suggestions ..... 205
**References ..... 207**
**Appendix (1) Questionnaire in English version ..... 233**
**Appendix (2): Questionnaire in Arabic version ..... 239**
**Appendix (3): Ethical Approval for the study ..... 240**
**Appendix (4) Descriptive analysis output of SPSS ..... 242**
**Appendix (5): Measurement and Structural model using PLS ..... 243**

# List of Figures and tables

## Figures

Figure 3-1: Proposed Research Framework ..... 85
Figure 4-1: Estimated coefficient of the path analysis ..... 165

## Tables

Table 2:1 Characteristics of successful entrepreneurs ..... 45
Table 2:2 Dimensions of Entrepreneurial Orientation ..... 49
Table 2:3 Hypotheses established for the model ..... 79
Table 2:4 Structural Model ..... 84
Table 3:1 Research Approaches, Source: Schadewitz and Jachna (2007) ..... 120
Table 3:2 Items Measurements ..... 128
Table 3:3 Provides a list of the items used for measuring each construct and presents the constructs of the study ..... 130
Table 3:4 Innovativeness items in the final questionnaire version ..... 144
Table 3:5 Proactiveness items in the final questionnaire version ..... 145
Table 3:6 Risk taking items in the final questionnaire version ..... 145
Table 3:7 Explorative capabilities items in the final questionnaire version ..... 145
Table 3:8 Corrected item-total correlations for exploiting capabilities ..... 146
Table 3:9 Reconfiguration capabilities items ..... 147
Table 3:10 Firm performance items ..... 147
Table 4:1 Variables Coding ..... 151
Table 4:2 sample profile ..... 155
Table 4:3 Descriptive statistics and normality tests of the constructs in the model ..... 155
Table 4:4 Illustrates the research variables included in the research ..... 157
Table 4:5 Correlation between Latent Variables and Square Roots of AVEs ..... 159
Table 4:6 Full Collinearity VIFs ..... 160
Table 4:7 Indicator Weights ..... 160
Table 4:8 Average Variances Extracted ..... 161
Table 4:9 Structure loadings and cross-loadings for latent variables ..... 161
Table 4:10 Reliability Assessment ..... 163
Table 4:11 Model Fit Indices ..... 164
Table 4:12 Structural model estimation results ..... 165
Table 4:13 Effect Size and R-square ..... 168
Table 4:14 Q-squared Coefficients Assessment ..... 169
Table 4:15 Indirect effects results ..... 171

# 1 CHAPTER ONE: INTRODUCTION

## 1.1 Introduction

The chapter outlines the research background and study context. The objective of the study and the research questions are also stated with some suggestions on how these might cover the gap in the literature reviewed and previous studies, enabling the research questions to be answered. This chapter briefly demonstrates the methodology and the research design used in the study. It concludes by highlighting the originality and contribution of the study followed by the thesis structure section.

## 1.2 Research Background

Entrepreneurship and firm performance topics have become attractive to academics as well as practitioners in the field of strategic management (Kim, 2018). This research focuses mainly on entrepreneurship and firm performance in small and medium-sized enterprises (SMEs). It can be argued that the study provides a theoretical discussion, as well as empirical results, on how Dynamic Capabilities (DC) with its three adopted dimensions meditate the relationship between firms' Entrepreneurship Orientation (EO) and performance (Wu, 2007).

SMEs are an integral part of the private sector world-wide (Al-Mahrouq, 2010; Hong and Lu, 2016), employing almost 60 percent of the labour force, and thereby directly influencing the world economy. SMEs play an important role by providing employment, delivering social services, earning substantial amounts of foreign currency for a country, and thus play an important role in the development of a country's economy by directly influencing sales revenues, increasing employment and boosting exports (Rodney et al., 2009; Hong and Lu, 2016). These effects are particularly visible in developing countries. Furthermore, SMEs also enhance technological processes and are regarded as being more

efficient than larger organisations in innovation and development (Mulhern, 1995; Anderson and Eshima, 2011).

In the case of the Middle East and North Africa region (MENA), it is evident that SMEs are the driving force of employment creation, development, growth, and economic expansion. Over 95% of organisations in the MENA region are SMEs, with more than 90% of these employing fewer than 50 workers (World Bank Group, 2018). Consequently, SMEs in the MENA region employ more than one third of the total workforce and produce about 60% of the region's GDP, which clearly demonstrates the predominant role of SMEs in MENA economies (Kandah, 2011). This level of importance has been achieved despite the likelihood of SMEs failing in developing countries being considerably higher than in more developed countries (Arinaitwe, 2006) and their growth being obstructed for reasons such as corruption, financial limitations and lack of entrepreneurship (Okpara and Kabongo, 2009).

Many researchers have been interested in the link between entrepreneurship and firm performance (e.g. Baum et al., 2000; Davidson et al., 2002; Ozcan and Eisenhardt, 2009; Su et al., 2011; Rodriguez-Gutierrez et al., 2015). The main issue in the measurement of entrepreneurship outcomes is choosing the appropriate measures of performance. When considering firm performance, firm growth has been identified as an important element of entrepreneurial performance (Gartner, 2007). In recent years, a growing body of opinion has supported the view of the importance of the role of growth in a firm's competitive advantage and profitability, and therefore growth rate has become a widely used measure of a firm's performance (Markman et al., 2005).

EO is the key concept in this study. This refers to a firm's strategic organisational posture, which captures specific entrepreneurial aspects of decision-making styles, methods, and behaviour (Lumpkin and Dess, 1996; Wales, Gupta, et al., 2013; Wiklund and Shepherd,

2003). It is worth noting that there are a large number of studies of EO, which raise issues such as the forces driving it; its appearance; and the connection between EO and performance (Miller, 2011). One of the topics of these ongoing debates is the definition of EO. There is no one widely accepted conceptualisation of this latent construct by the scholarly community, but rather different degrees of acceptance for certain conceptualisations (Covin and Lumpkin, 2011).

The existing literature shows that researchers examine performance by analysing the entrepreneurial activities within firms and their relationship with firm performance (Zahra and Garvis, 2002; Lumpkin and Dess, 2001; Wiklund and Shepherd, 2005; Shirokova, et al., 2016). Entrepreneurially oriented firms, especially small firms or new ventures, can be better placed in comparison with their competitors in the market place, and can improve their performance more effectively (Zahra and Garvis, 2002; Lumpkin and Dess, 2001; Wiklund and Shepherd, 2005).

Hunger and Wheelen (1996) observed that the action of entrepreneurs usually involves strategic managers in small firms, because they apply and take all strategic and operational decisions. Also, they use strategic management tools and techniques for analysing markets, and the firm's resource allocation, financial plan and developing business (Sahlman et al., 1999; Gupta and Batra; 2015).

As a significant driver of company performance, corporate entrepreneurship becomes a necessary condition for firm survival and wealth creation in increasingly dynamic and competitive environments (Hoskisson et al., 2011; Phan et al., 2009; Zahra, Filatotchev, and Wright, 2009; Zhang, et al., 2016). Corporate entrepreneurship (CE) is the set of activities developed by a firm that pursue the identification and exploitation of entrepreneurial opportunities (Sharma and Chrisman, 1999; Teng, 2007). It involves the

continuous renewal and transformation of company resources and competences with the aim of identifying and exploiting new business opportunities (Yiu and Lau, 2008).

The firm's performance is intrinsically linked to DC, which are an appropriate theoretical foundation because of their role in developing new knowledge resources that enable firms to pursue value creation strategies (Eisenhardt and Martin, 2000; Cepeda and Vera, 2007; Zahra et al., 2006). DC enhance the firm's ability to seize new opportunities and undertake challenging market entry (Teece, 2007). However, research into DC has emphasised established firms, overlooking new ventures and SMEs. Such firms typically employ DC to become established, achieve legitimacy, grow, survive, and reap the benefits of innovation (Sapienza et al., 2006).

The dynamic capabilities approach consequently asserts that opportunities for business lie in the intersection between a focus on the firm's internal processes and an outward focus on the market environment, in so far as how these internal processes are deployed and will evolve (Teece, et al., 1997). Dynamic capabilities cannot, however, be easily bought but are rather built over time, thereby requiring a long-term commitment to their unique development, thus making it difficult for competitors to imitate (Teece, et al., 1997; Zapata-Cantu, et al., 2015; Bodea, 2016). Braganza, et al. (2017), however, propose that there are several organisational characteristics and internal factors that limit the extent to which a firm can develop dynamic capabilities. Based on these theoretical underpinnings, strategy therefore is about using available internal resources in a way that maximises organisational performance (Pablo et al., 2007).

Along with EO and performance relationships, DCs mediate this relationship, which is affirmed by Lin and Wu (2014), who stated that DC have the capacity to meditate this relationship to convert the firm's resources into improved performance. This is due to the fact that while the resource-based view argues the ownership and control of unique

resources forms the basis of unique value-creating strategies, the DC approach enables managers to acquire, shed, integrate and recombine resources in order to generate new value-creating strategies that drive firm performance (Eisenhardt and Martin, 2000).

Although many researchers have focused on the direct relationship between entrepreneurship and firm performance in organisations, rather less attention has been paid to the indirect link between the entrepreneurship and firm performance. Thus, this research will contribute to the literature by investigating the intervening role of EO on performance through DCs. Furthermore, meta-analysis (Rauch et al., 2009) and an extensive review (Wales et al., 2011a) of EO research concludes that research has focused on the direct EO–performance link and less on indirect effects and the relationship of EO with other variables (Lechnerand Gudmundsson, 2014).

## 1.3 Theoretical Background

The business environment has already progressed from the Industrial era to the Information Age. Traditional economic theory frequently describes the basic resources necessary for a firm in terms of the classic assets of land, workforce and other economic assets (Sullivan, 2000). However, according to the resource-based view (RBV), a firm's resources, particularly intangible ones, are more likely to contribute to the firm's attaining and sustaining superior performance (Eisenhardt and Schoonhoven, 1996). During the past decades, EO has been embraced by most organisations worldwide. It plays a fundamental role within modern organisations and is part of the foundation of business in the 21st century. Studies have begun to examine the EO process by which those effects are eventually realized (Martinez-Torres, 2006; Rudez and Mihalic, 2007). EO has thus been identified as one of the key drivers of firm-level performance (Teece, 1998; Youndt, Subramaniam and Snell, 2004). Moreover, the interaction of the external environment with organisational strategy is expected to be related to performance. To

maximize performance, firms need to pursue competitive strategies that best match the conditions of the external environment. In other words, managers' perceptions of the external environment are expected to affect a firm's strategy. Therefore, a firm's strategy must be to deploy its resources to seize opportunities in the market. DC offers a bridge which spans the debates in the strategy field which propose either RBV of the firm or the emerging discourse surrounding the external dynamic business environment. While there is a wealth of literature on entrepreneurship (Batjargal, 2007; Bontis, 1999; Bozbura, 2004; Bukh, Larsen and Mouritsen, 2001; Das, Sen and Sengupta, 2003; Fincham and Roslender, 2003; Guthrie, 2001; Nielsen, 2006), research incorporating DC into EO in context of Saudi Arabia is scant. Existing EO studies mainly focus on ascertaining their impact and consequently their business value (Moon and Kym, 2006), but few studies utilize a theoretically focused approach to understand how DC mediates the impact of EO on firm-level performance. Drawing on previous studies related to dynamic theories (Teece, Pisano and Schuen, 1997; Winter, 2003), this research posits an alternative mechanism for the EO–performance relationship whereby DC mediates the effect of EO on performance. The major assumption of organisation learning theory, which focused on recurrent patterns of behaviour in organisations, i.e. routines (Levitt and March, 1988) is that continuous modification and upgrading of collective routines enables organisations to respond to their changing environments. This provides a conceptual framework for hypothesizing the mediating role of DC in the relationships between EO and performance (Brown and Duguid, 1991; Hong, Easterby-Smith and Snell, 2006). Cyert and March (1963) were the first to propose that an organisation might be able to learn in ways that are distinct from the accumulated learning of individuals. They built their views on a model of decision-making within firms which emphasises the role of rules and procedures in response to external shocks. This suggests that learning plays a

significant role in the creation and development of DC. Eisenhardt and Martin (2000) and Zollo and Winter (2002) also argued that learning is at the basis of DC and guides its evolution. DCs are organisational routines that can accumulate knowledge through the learning processes (Nelson and Winter, 1982). Previous studies have posited that DCs exist in special operating routines and arise from learning (Argyis and Schon, 1978; Huber, 1991). Argote (1999) identified the path of DCs as being more accurately described as a learning mechanism that guides knowledge creation. Organisational Learning (OL) mechanisms are important in understanding the capability firms have and will have in meeting and addressing the challenges and changes in their environment. More specifically, DC contributes to firm's EO to handle changing situations. From a dynamic perspective, successful performance depends on consistent and competitive behaviour that relies on a firm's ability to learn and adapt by exploration, exploitation and reconfiguration. Over time, this can move the firm in the required direction, toward an efficient response to dynamic market conditions. This research develops a model to explain how a firm's performance is influenced by EO through the mediation of DC, which serves as a firm's managerial interface to the external environment. This framework is a contribution to the literature on strategic management because it provides a theoretical basis for cumulative additions to our understanding of the concepts of EO and DC.

The overall aim of this research is to examine the indirect effect of EO (that is, innovation, proactiveness and risk taking) on firm performance through the mediating role of DC (that is, exploitative, explorative and reconfiguration capabilities) in Saudi Arabian SMEs.

## 1.4 Research Context

The context of this research is SMEs in Saudi Arabia, which forms the background upon which this research is developed and implemented. Saudi Arabia provides an interesting context for the study, because SMEs constitute over 96% of all firms, but account for only one third of GDP (Al-Jaseer, 2010). Encouraging SME growth, therefore, is essential not only for job creation, but also for the continued diversification of the Saudi economy. In this section, the Saudi Arabian population, economy and SMEs in vision 2030 will be presented.

### 1.4.1 Population

Saudi Arabia is one of the largest countries in the Middle East with an area of around 2.25 million square kilometres (World Bank, 2016). It has a total population of 32 million, 47% of who are under the age of 25 (SAGIA, 2016).

The total estimated population in 2014 was 30.77 million, comprising 20.70 million Saudis and 10.07 million expatriates. Annual population growth from 2013-2014 was 2.6% net. Of Saudi nationals, 7.1 million are under working age and about 700,000 are of pension age, leaving approximately 13.5 million citizens of working age. Furthermore, the total number of people in employment in 2014 was around 11 million, including 6 million expatriates. Around 237,000 people joined the workforce while 100,000 left in 2014; the total number of unemployed Saudis increased to 651,305 in 2014 from 622,533 in 2013 (Saudi General Authority for Statistics, 2016).

### 1.4.2 Economy

Saudi Arabia is a member of the G20 and of the Gulf Corporation Council (GCC) (Alsomali et al., 2015). It is ranked amongst the top 20 largest economies in the world and is considered to be a rapidly developing country (Statistics Times, 2016; World Bank, 2016). Saudi Arabia

is rich in natural resources, which consist of petroleum, natural gas, gold, copper and iron (CIA, 2015). While its economy depends mainly on the oil, banking, telecommunication and retail sectors, the oil sector is by far its largest in terms of exports. Saudi Arabia is one of the largest oil exporting countries in the world (Alsomali et al., 2015). The revenue generated from these oil exports has enabled the country to establish a sound financial position and to use that position to invest heavily in its information technology (IT) infrastructure.

The GCC states (Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and the UAE) have many vibrant industries, including oil and gas refining, petrochemicals, manufacturing and banking. Saudi Arabia has effective hegemony in the GCC and it is a major economic power in its own right, being a member of the Group of Twenty (G20), the second largest oil producer and one of the top natural gas producers in the world (US Energy Information Administration [EIA], 2015). Saudi GDP was SR 2,821,722 ($753.8 billion) in 2014, while the total revenue of merchandise exports was SR 1,28 trillion ($ 341 billion) and the total value of imports were at SR 651,8 billion in 2014 (Table 2.1, 2.2). Furthermore, the merchandise trade of the Saudi Arabia was at SR 1.9 trillion in 2014. Most exports comprised oil and gas products (crude oil and refined products) valued at SR 1,066 billion, contributing 83% of total exports. Non-oil exports were valued at SR 186,6 billion, mainly comprising petrochemical products valued at SR 143,6 billion, 11% of total exports (Saudi Economic Report 2014 (SECOR), 2015).

### 1.4.3 SEMs in Vision 2030

Saudi Arabia is looking to grow its economy without relying on oil by encouraging new technologies that can benefit individuals and communities. The Crown Prince of Saudi Arabia, Mohammed bin Salman bin Abdulaziz, defined the transformation process as

"Vision 2030" (Al-Kibsi, Woetzel, Tom Isherwood, Khan and Mischke, Noura, 2015). The country is focusing on investing in natural resources, information technology resources, business and marketing (Al-Kibsi, Woetzel, Isherwood, Khan and Mischke, Noura, 2015). Entreprenurship development includes funds and consultation support for small and medium sized enterprises. Vision 2030 focuses on providing opportunities for Saudi citizens regardless of gender. Three of the commitments of Vision 2030 are: (1) increase small and medium- sized enterprises' (SMEs) contribution to the GDP, (2) reduce unemployment, (3) and increase job opportunities for Saudi women. For both young people and women, the focus is on establishing resources and programmes to develop their job and personal skills. Unemployment in Saudi Arabia is projected to fall from 11.6% to 7%. Additionally, opportunities for women to participate in jobs is projected to increase from 22% to 30% ("Thriving Economy Rewarding Opportunities," n.d.). The country hopes this will help expand entrepreneurship and enterprise opportunities, according to King of Saudi Arabia Prince Salman bin Abdulaziz (2015).

Under Vision 2030, the Kingdom plans to raise the contribution of SMEs from the current 20 % of the Gross Domestic Product (GDP) to 35 % by facilitating their access to funding and encouraging financial institutions to allocate up to 20 % of overall loans to them from the current 5 %. One of the important steps in supporting these companies was the establishment of the General Authority for Small and Medium Enterprises (Monsha'at) in 2015, which aims to increase the contribution of SMEs in the economy from 500 billion Riyals in 2014 to 2 trillion Riyals in 2030.

SUSRIS (2011) reported that SMEs account for about 90 % of business enterprises in Saudi Arabia. 85% of SMEs are sole proprietor entities. 74% of SMEs are in trade and construction followed by the industrial sector. SMEs account for round 62 percent of total employment

in Saudi Arabia (global average 60-75 percent). Around 33 percent of SMEs contribute to GDP less than the global average but higher than other GCC countries (Nurunnabi, 2017). In carrying out this research, it is worthwhile contextualising the characteristics and roles of SMEs in Saudi Arabia. However, defining SMEs is not very easy due to the variety of characteristics and geographical perspectives in the global operations of SMEs and the ways in which different authors, governments, scholars and institutions categorise SMEs. Thus, attributes such as the annual turnover of the firm, the amount of capital invested, the number of staff members, asset value of the firm, the industry in which the firm operates and the country in which the country operates all determine if it is classified as an SME or not (Motwani, Levenburg and Schwarz, 2006). In Saudi Arabia, the core characteristics that are used in determining if a firm is SME or not are primarily the asset value, the amount of capital invested in the firm and the number of employees the organisation employs (Saudi Arabia Monetary Agency, SAMA, (2013). In using the sales value, firms whose sales are less than SR30 million are classified as SMEs in Saudi Arabia (Sambidge, 2011). Organisations with fewer than 59 employees are categorised as small sized enterprises while those with between 60 and 99 staff members are categorised as medium sized enterprises, thereby making SMEs in Saudi Arabia to be enterprises with 99 or fewer employees (SAMA, 2010). SMEs in Saudi Arabia play many significant roles, which tie well with the main reasons for undertaking this research. These roles have been summarised by SAMA (2016) as:

1. Economic diversification – SMEs facilitate the diversification of the Saudi economy by bringing about new investment and economic opportunities thereby creating new industrial sectors. It aims to achieve growth objectives through five-year plans and limiting the reliance on oil revenues, as GDP at constant prices (year 2010) grew by 3.5 %. (SAMA, 2016).

2. Increased national economic growth – This is accomplished by creation of new exports, increased employment opportunities and reduced dependency on imports. Otsuki (2002) notes that this could be at a rate higher than 50 per cent of the national economic growth.
3. Increased employment – Saudi Arabia has an increasing population of educated and unemployed young people. This process can be achieved through a Saudisation programme which will not only increase employment of Saudi nationals in all sectors, reduce over-reliance on foreign sources of labour and reduce outflow of capital in the form of overseas remittances (Looney, 2004) all of which are ideal for SMEs growth.
4. Regional development – SMEs are important in the growth and development of various regions in Saudi Arabia. According to Ministry of Economy and Planning (2010), SMEs are fundamental to the development of Saudi Arabia's economy both nationally and regionally.
5. Technological innovation – Innovation in SMEs creates opportunities for Saudi Arabia to innovate new technology, products and services while enhancing the adoption of new technology and innovations developed elsewhere in the world. The Ministry of Economy and Planning (2010) states that SMEs are responsible for the current development and key to future IT-driven innovation, accounting for 33% of Saudi Arabia's IT expenditure. IT- driven innovation SMEs are paramount to the development of Saudi Arabia's economy
6. Expansion of exports – SMEs will enable Saudi Arabia to grow its export market by diversifying the economy, creating new products and facilitating ease of launch of products and services aimed at the export market if demand arises. This is especially so because SME operate in new, aggressive and highly versatile economic

environmentcompared to large scale firms and government organisations (Audretsch and Thurik, 2004).

It is hence clear that for Saudi Arabia to achieve its diversification and increased employment aims, one of the main approaches it could use is the support and enhancement of the establishment, growth and sustainability of SMEs in the country. However, given that numerous factors impact the extent to which SMEs' establishment, growth and sustenance is achieved, there is a need for increased knowledge and understanding of how SMEs grow and can be sustained in Saudi Arabia. As such, this research seeks to develop a better understanding of one aspect of SMEs, namely EO in Saudi Arabia and how this impacts on the performance of SMEs performance. This is done by determining how EO relates to SMEs' exploration, exploitation and reconfiguration capabilities.

On the other hand, SMEs have been found to be a driving force for growth within the Middle East and North Africa (MENA) region as they have been instrumental in the creation of employment, the growth and expansion of MENA economies, and in all aspects of social and economic developments in the region (Kandah, 2011). SMEs represent between 95% and 99% of private firms in the MENA region but account for under 30% of employment (compared to 66% in emerging economies and 50% in industrialised countries (OECD, 2017). There is hence a huge opportunity to develop and enhance the performance of SMEs to help countries like Saudi Arabia to achieve their objectives. It is worth noting that "more effective SME policies lead to more and better jobs, higher productivity, and greater innovation by introducing new ideas, products, services and business models" (OECD, 2017: p.16). This has led to the development of this study so as to determine and develop a better understanding of EO as a means by which SMEs performance can be improved.

EO has been identified in the literature as a major contributory factor to achieving competitive advantage, growth, innovativeness and better performance of businesses and organisations (Kraus et al., 2012). On the other hand, entrepreneurship and firm performance topics have also become major areas of study among academics and practitioners seeking to determine ways to develop and establish sustainable economies (Ogbo, 2012). Understanding the relationship between EO and the performance of SMEs plays a major role in understanding how SMEs can create and sustain sustainable competitive advantage within a dynamic economic environment (Kraus et al., 2012; Wiklund and Shepherd, 2003). There have been numerous researchers working in this area with a major interest in determining the relationship that exists between the entrepreneurship and performance of a firm (Baum et al., 2000; Davidson et al., 2002; Ozcan and Eisenhardt, 2009; Su et al., 2011; Rodriguez-Gutierrez, et al., 2015). These will be helpful in forming the background upon which this study is developed and published.

### 1.5 Study Motivation

The study is motivated by three main issues. Firstly, SMEs' contribution to the economy in Saudi Arabia has been found disappointing by less commitment to GDP 33% (Parveen et al., 2017). Moreover, SMEs suffer from a set of problems. These problems are as follows: institutional barriers to industry entry which are disproportionately high for new players (Chang & Wu, 2014), and sceptical societal attitudes towards entrepreneurship (Spencer & Gomez, 2004; Ahlstrom et al., 2008). On the other hand, internal challenges stem from ineffective organisational routines (Shane & Foo, 1999) exacerbated by inadequate resource endowments (Aulakh et al., 2000) and a lack of managerial sophistication (Lyles et al., 2004). Furthermore, SMEs in Saudi Arabia lack capability to exploit mature technology, suffer from an inability to upgrade skills and knowledge related to core business, and they also suffer

from immaturity in strengthening the firms' knowledge on financing new opportunities (Ahmad, 2012, AlGhamdi, Nguyen, Nguyen, & Drew, 2012; Mutahar, Rasli & Al-Ghazali, 2015). The second motivation of the study is that government concerns have started to focus on why SMEs appear to be unsuccessful despite the financial and institutional support provided to this sector. Consequently, the study attempts to address the concerns raised by Saudi Arabia's government.

Finally, the relevant literature provides limited studies in EO and firm performance of SMEs carried out in Saudi Arabia (Abed et al., 2015), while much literature exists on EO and organisational performance in other contexts (Anderson & Eshima, 2013; Gupta & Wales, 2017; Miller, 2011; Wales, 2016; Wales, Gupta & Mousa, 2013). It is worth noting that the majority of empirical studies on this topic focus on developed markets, and no major study exists for developing economies, particularly Saudi Arabia (Yusuf & Albanawi, 2016, Keyed and Hassan , 2011; Mutahar, Rasli & Al-Ghazali, 2015). This research therefore aims to conduct an empirical analysis of the overlooked role of entrepreneurship orientation's indirect impact on SMEs growth in Saudi Arabia; thereby it aims to examine the mediation effect of dynamic capabilities. Research on managing the process of deploying available resources and exploring other resources is still missing (Pezeshkan, et al, 2016). Therefore, the DCs approach, exploring, exploiting and reconfiguring capabilities, is posited as this missing element. Despite an early call to implement dynamic capabilities, little empirical evidence has been brought out to show out how DCs can mediate the entrepreneurial orientation, in this case, and firm performance. This research will thus contribute towards a better understanding of the indirect relationship that exists between EO and performance through imposing the mediating dynamic capabilities in SMEs in Saudi Arabia context.

## 1.6 Research Aim, Objectives and Questions

This research aims to examine the indirect effects of EO (that is, innovativeness, proactiveness and risk-taking) on performance of a firm through the mediating role of DCs (that is, exploitative, explorative and reconfiguration capabilities). This study focuses on SMEs in Saudi Arabia.

To achieve this aim, this research sets out the following research objectives,

1. **To examine separately the relationship between innovativeness, proactiveness, risk-taking on dynamic capabilities.**

   To address this objective, the research tests the effect of the three dimensions of EO on the three dimensions of DC which are exploration, exploitation and reconfiguration.

2. **To investigate the direct influence of DC dimensions on firm performance.**

   This objective will be addressed by testing the direct impact of the DC dimensions (exploration, exploitation and reconfiguration) on firm performance.

3. **To examine the mediating role of explorative, exploitative, reconfiguration capabilities on the relationship between EO and firm performance.**

   This study tests the mediatory effects of DCs on the effect of EO on SMEs performance in Saudi Arabia.

To achieve the above objectives, the following set of questions have been formulated.

- **RQ 1**: To what extent do EO dimensions of innovativeness, proactiveness and risk-taking affect exploitative, explorative, reconfiguration capabilities?
- **RQ2**: To what extent do the DC dimensions of exploration, exploitation, and reconfiguration affect a firm's performance?
- **RQ 3**: How strongly do DC's exploitative, explorative, reconfiguration capabilities mediate the relationship between EO and firm performance?

## 1.7 Research Methodology

The methodology used in this study has confirmed that its design is appropriate in providing answers to the research questions and in testing the research hypotheses. This study has adopted two assumptions of research philosophy named ontology (objectivism) and epistemology which is concerned with the development of knowledge. These assumptions lead to the adoption of a positivist philosophy which presumes that theoretical models can be developed in order to explain cause and effect relationships. This philosophy has allowed the application of a deductive approach which requires the development of hypotheses based on a suitable theoretical framework which explains the relationship between EO and firm performance through DC. A quantitative method is employed to obtain the research results and a questionnaire was used to collect data from SME managers in Saudi Arabia.

## 1.8 Research Rational and Significance

Though much literature exists on EO and organisational performance (Anderson and Eshima, 2013; Gupta and Wales, 2017; Miller, 2011; Wales, 2016; Wales, Gupta and Mousa, 2013), there is limited literature on Saudi Arabia (Abed et al., 2015; Parveen et al., 2017). This research will adopt the theoretical frameworks and understanding developed by these researchers who are from other countries to investigate the subject matter in Saudi Arabia. This research will thus contribute towards a better understanding of the indirect relationship that exists between EO and performance of SMEs in Saudi Arabia.

However, despite these studies, the debate continues with regard to the nature of the evidence and the degree to which EO and performance relate (Miller, 2011). This has arisen due to multiple complexities of this area of study. Arguably, this study is motivated by the following four main motives. First, as noted earlier, there is a discrepancy in the definition of SMEs. Thus, understanding EO among SMEs is difficult when different scholars and authors refer to

different things when they talk about SMEs. Secondly, there are difficulties in establishing a set of standardised variables to measure and to determine entrepreneurial outcomes and performance (Gartner, 2007). Thirdly, as stated by Markman et al. (2005), there are also difficulties in identifying and explaining competitive advantages and performance which are central to defining and analysing EO. Fourthly, the definition of EO is difficult to agree among scholars which arises from the differences in the conceptualisation of the variables analysed in understanding EO (Covin and Lumpkin, 2011).

On the other hand, scholars such as Szirmai et al. (2011) and Teece (2016) argue that the rise in global competition coupled with the fast-changing global environment requires dynamic entrepreneurial approaches where firms have to be able to adapt quickly to capitalise on their capabilities to sustain competitive operational performance. There is also an increasing perception that better research and increased knowledge in all aspects of business operations including EO, performance and dynamic capabilities helps firms to improve their performance (Bowonder et al., 2010; Ireland and Webb, 2007; Salunke et al., 2011; Teece, 2016). Moreover, Hitt et al. (2001) noted that firms ought to adopt entrepreneurial strategies for them to successfully compete, and identify opportunities and advance their entrepreneurial strategies hence improving their performance. Thus, this research seeks to improve the available knowledge especially on SMEs in Saudi Arabia.

Numerous research studies have been carried out on the direct relationship between entrepreneurship and firm performance (Alegre and Chiva, 2013; Brettel et al., 2015; Wiklund, 1999, 2003, 2009). The dynamic nature of globalised business increases uncertainties and threats to firms, thereby demanding that they explore prospective opportunities to gain and retain competitive advantage. This pressure demands that firms are better versed and more knowledgeable on how to operate successfully in the dynamic environment with ever-increasing competitors. Such dynamism and operational success requires knowledge and

understanding about the variables that can be addressed to sustain performance. Hence there is a need to develop new and suitable knowledge by investigating the relationship between EO and firm performance, and how this relates indirectly, to the exploring, exploiting, and reconfiguration capabilities of a firm. This research will contribute to the limited literature that is available on this area, especially among SMEs in Saudi Arabia. Although there is an increasing trend towards undertaking research on entrepreneurship, EO, firm performance and DC among different types of businesses in Saudi Arabia, there is a limit to the extent to which they consider the country's social, economic and cultural factors (Ali and Al-Ali, 2012; Khan et al., 2013). This research thus not only contributes to these pioneering studies but also acts as a trigger for further interest in wider and more exhaustive studies being carried out in Saudi Arabia.

Finally, this research acts as a source of information on the increasing governmental and business call for increased operations and engagement of SMEs in Saudi Arabia to facilitate the diversification of the economy and increased employment of younger people as per the Saudi Vision 2030 (Abed and Zhang, 2018; Horschig, 2016). It is therefore, a significant contribution in terms of the data collected, results presented and interest generated in this area of study.

### 1.9 Originality and Contributions

This research was undertaken to address the various limitations which have been identified by previous research and to counter the lack of data and information on EO in Saudi Arabia (Pistrui and Fahed-Sreih, 2010; Kayed and Hassan ,2011; Ali and Al Ali ,2012; Ahmad ,2012; Khan et al., 2013; Salem, 2014; Abed, et al, 2015; Mutahar, Rasli & Al-Ghazali, 2015; Horschig, 2016; Yusuf & Albanawi, 2016; Cassol, Gonçalo, & Ruas, 2016; Kantur, 2016; Ali, Suny Ali, 2017; Abed and Zhang, 2018). To begin with, the various research studies on

EO and performance have tended to show varied results even when other studies have a similar population of firms at a similar time line, thereby requiring further research to determine this relationship (Kollmann & Stoeckmann, 2014; Kraus et al., 2012; Lechner & Gudmundsson, 2014; Wang & Yen, 2012). Secondly, EO is a construct which has not been widely studied in some developing countries including Saudi Arabia. This research seeks to investigate the ecosystem in which the EO exists in Saudi Arabia and what its influencers and variables are (Chen and Hsu 2013; Sahasranamam & Raman, 2018). Thirdly, understanding the relationship between EO and performance is plagued by problems arising from the environmental turbulence within which the firm operates (Pratono & Mahmood, 2016; Zellweger & Sieger, 2012).

On the same footing, different researchers investigate different geographic and time periods while others utilise different variables to determine relationship between EO and the performance of a firm. Some examples are Pratono & Mahmood (2015) who use market reward philosophy or Morgan et al., (2009) who use marketing capability variables to determine this relationship. Such approaches make it difficult to effectively report on EO and its impact on organisational performance and hinders the prospects of effective comparison in countries where limited studies on this subject have been carried out, such as in Saudi Arabia. This limitation coupled with the need to explore the mediating effects of variables such as exploration, exploitation and reconfiguration capabilities that affect EO and performance, led to the need to carry out this research.

This research was also carried out to develop a better understanding of the SME sector in Saudi Arabia. The desire of the government and business people in the country to diversify the economy and develop successful SMEs (SAMA, 2013) demands that there is a need for high quality knowledge and understanding of the business operations and its determinants. By investigating these unexplored areas of EO and the relationship between specific variables and

performance among SMEs in Saudi Arabia, it lays the foundation for further studies, either directly or through comparative processes. This study thus sheds light EO in Saudi Arabia especially within the performance of SMEs. The contributions of this study can be summarised in the following points;

- Organizations that do not learn to adapt to their changing environment will likely not grow or even fail (Baskin, 1995). In order to encourage firm growth, organizations must continuously learn in order to stay with or ahead of the competition, adjust to their changing environment, and stay relevant (Sapienza, Autio, George, & Zahra, 2006). With this in mind, the study showed that organizations need to continuously and routinely explore, exploit and reconfigure their capabilities.
- Many of the previous studies on EO on context of KSA were not based on theoretical bases; hence, adapting DCs and RBV theories is validating the model in a more comprehensive view.
- This thesis extends research on how EO interacts with firm-level capabilities to increase firm performance by arguing that dynamic capabilities play a central role in converting EO into improved performance. Dynamic capabilities differentiate from "ordinary" resources and capabilities, as they allow the firm to reconfigure its existing resource and capability base (Eisenhardt and Martin, 2000, Teece et al., 1997).
- This research contributes to the EO and dynamic capabilities literatures in terms of EO literature, it develops a theoretical rationale for how EO interacts with exploration, exploitation and reconfiguration as a major dynamic capability that is required in order to increase firm performance. In doing so, the research linked EO to the theory of dynamic capabilities and addresses Miler's (2011) call to embrace theories of related disciplines, such as strategic management, in order to clarify which resources and capabilities foster a robust entrepreneurial process.

- Dynamic capabilities, which have been conceptually expected to be the "key means for linking EO to firm opportunity exploitation and subsequent performance" (Covin and Lumpkin, 2011; p. 861), still require examination in the KSA context. Consequently, the study provides a review of the DC of SEMs in the KSA context.
- In actual operations, this study demonstrated that dynamic capabilities were significant, transforming entrepreneurial resources into performance. Without dynamic capabilities to convert resources into advantage, entrepreneurial resources do not translate into performance (Zott, 2003).
- To the best of my knowledge, the study is the first that provides an empirical evidence on the indirect relationship between EO and firm performance through the DC in the SMEs in the Saudi context.
- The study offers valid findings suggesting SMEs need to allocate their investments in resources and capabilities to attain a competitive advantage consistent with their strategic posture.
- The study's contribution to the EO literature is the empirical validation of the theoretical argument that a firm's EO–performance relationship is mediated by the dynamic capability in context of Saudi Aribia.
- The study contributes to the literature by providing a valid comprehensive model for the relationship between EO dimensions and Dynamic capabilities in SEMs' performance.
- The study focuses on EO dimensions individually as antecedents to dynamic capabilities (exploring, exploiting, and reconfiguration capabilities).
- The research contributes to the dynamic capabilities literature by mediating the effects of dynamic capabilities on the relationship between EO and firm performance.

- The research serves to enrich the understanding on the subject of entrepreneurship and will specially help to fill the lack of academic research available about SMEs in the KSA. In addition, the insights gained from this study contribute to the future development of this line of research, particularly in a non-Western context. Proper attention to the issues raised and recommendations made could give a significant boost to entrepreneurial activities in the region.

### 1.10 Thesis Structure

The organisation and presentation of this thesis is such that there are six chapters whose contents and structure is as follows.

**Introduction:** This chapter gives the introductory and background information about this research. It outlines the background, research context including SMEs in KSA, gaps and contribution, aims and objectives, theoretical background, rationale and significance and finally the structure of this research.

**Literature Review and hypotheses development:** This chapter starts by presenting the concepts and definition, then it presents the theories relevant and finally ends with the conceptual framework. The chapter begins by examining the concept of entrepreneurship. This is followed by an analysis of SMEs in respect of their definitions, perceptions of entrepreneurship in SMEs and the factors that impact their growth. These concepts include EO and the organisational performance of SMEs and the dynamic capabilities: exploration, exploitation and reconfiguration. The current literature's view on organisational performance, especially in Saudi Arabia or similar environments, and how this performance relates to the firms (and SMEs) innovativeness, proactiveness and risk taking, and their exploration, exploitation and reconfiguration capabilities is examined and explained. This chapter forms the background for the theoretical foundations upon which the other chapters are developed. This

chapter discusses the research framework and the model that is adopted by this research and how the hypotheses will be tested. It starts by outlining the conceptual framework that will be used and why this framework has been adopted. Thereafter, the hypotheses that will be tested in this research are outlined and explained.

**Research Methodology:** This chapter explains the methodological approaches that this research has adopted. It details the ways and means by which the questionnaire and interview process is carried out and an explanation of the actual testing, sampling and data collection processes. A detailed analysis of how this is carried out and presented such as identifying organisations, their experiences, views, activities and processes including interviewing and questionnaire completion, practical data collection, storage, analysis and presentation will be explained in this chapter. In the process, it explains, justifies and defends the research approaches and methodological paradigms adopted in this research.

**Findings and Discussion:** this chapter presents the data collected and the analysis of the findings of the interviews and surveys carried out. It also presents a detailed analysis of the data collected by evaluating the results of the research. A detailed summary of findings and their meanings is also presented and deductions of what the data and results means is stipulated in the discussion section. Finally, it ends with a discussion section which presents the core findings of this research by explaining the relationships that were identified in the findings and links back to the literature. It discusses in detail the research hypotheses and how they relate to the aims and objectives of the research. It also explains any differences and contradictions that exist between the existing studies and presents reasons as to why these differences exist.

**Conclusion:** This, the final chapter in this research, summarises the findings and conclusions of this research. This section also ties together the research aims and objectives of this research

and the research questions and links these to the discussion and the existing literature so as to draw conclusions. It also discusses the theoretical and practical implications of this research and its results. The chapter also outlines the limitations of this research and identifies areas for future research.

### 1.11 Summary

This chapter presented a detailed outline of this research in terms of its background, context, gaps and contributions, and its aims and objectives. In addition, it also discussed the theoretical background of this research and its rationale and significance. It closed with a summary of the research structure.

# 2 CHAPTER TWO: LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

## 2.1 Introduction

This chapter discusses the concept of entrepreneurship especially in the field of SMEs as a starting point. Then it will explore what the existing literature says with respect to the main variables, attributes and concepts that this research will investigate. It starts by investigating what most literature says about entrepreneurship. This is followed by an analysis of SMEs with respect to their definitions, perceptions of what being a SME entails and the factors that impact their growth. Thereafter, there is a discussion on RBV theory followed by the factors mediating the manifest growth of SMEs, which are dynamic capabilities (DCs) definitions and investigation of exploration, exploitation and reconfiguration. Also, it presents the effect of entrepreneurship on the performance of SMEs and the impact of entrepreneurship on performance. Finally, it ends with the development of a conceptual framework which has been built based on the relevant theories, and gives a summary of gaps and shortcomings in the previous studies.

## 2.2 Definitions and Concepts

This section demonstrates the key definitions and concepts of the study. It starts with the main concept which is entrepreneurship, then moves to the characteristics of entrepreneurs. It considers entrepreneurship orientation and its dimensions in detail (Innovativeness, Proactiveness and Risk-taking), then it goes on to present the dynamic capabilities dimensions (Exploration, Exploitation and Reconfiguration), and finally discusses firm performance in SMEs.

### 2.2.1 Entrepreneurship

The word ‘entrepreneur’ comes from the French, meaning commencing a new business, which is reflected in the definition of Kirchhoff (1944), who argued that entrepreneurs are creators of new enterprises aimed at doing business. In the late 1950s and with the advent of Solow’s Neoclassical Growth (1956), labour and capital were considered as the most important factors in determining the economic growth of countries. In studies of growth theory, a neoclassical production function was used, which contains only the two above factors: labour and capital. In the 1980s, Solow’s Growth model faced many criticisms, including the lack of ability of this model to explain long-term economic growth.

Because of the multidimensionality of the concept, there is no commonly accepted definition of entrepreneurship and in recent years, the concept has been the subject of increasing attention in terms of scholarly research (Wiklund et al., 2011). Entrepreneurship, in its narrowest sense, involves capturing ideas, converting them into products, or services and then building a venture to take the product to market (Johnson, 2001; Semrau et al., 2016). Miller (1983) argues the significant features of entrepreneurship are risk-taking, pro-activity, and innovation. Conversely, some authors, for instance, Slevin and Covin (1997), and Semrau, et al. (2016), argue that these three factors are not sufficient to ensure that an organisation succeeds. They assert that organisational success depends on both entrepreneurial behaviours and a strong corporate culture.

Despite the lack of a universally accepted definition of the term itself, at its core entrepreneurship refers to individual activities through which value is created by the exploration, recognition and exploitation of opportunities. These opportunistic actions are accompanied by risk affinity and are strongly linked to innovative outcomes (Cools and Van den Broeck, 2008; Covin and Wales, 2012; Landström, 2009; Pearce et al., 2010). Many definitions of entrepreneurship have been developed and these are combined with an emphasis on the concept of innovation (Schumpeter, 1934; Wong et al., 2005). Innovation can be the

development of new products, new process, creating new markets or new forms of organisation (Wong et al., 2005).

Entrepreneurship stems from the orientation of new ventures towards the identification of market opportunities that have not yet been discovered and / or are under-exploited by competitors. These opportunities are then exploited using uniquely compiled resources (Davidsson, Delmar and Wiklund, 2002; Hitt, Ireland, Camp and Sexton, 2002). Initial investigations of EO can be attributed to Mintzberg (1973) and Khandwalla (1977), who defined EO as a "managerial disposition rooted in decision making" (Covin and Wales, 2012: 679). Subsequently, Miller (1983) operationalised the EO concept, defining an EO-oriented company as "one that engages in product-market innovation, undertakes somewhat risky ventures, and is first to come up with proactive innovations, beating competitors to the punch" (p.771). The first measurable scales of the three EO dimensions of proactiveness, innovativeness and risk taking were generated by Covin and Slevin (1988), based on Miller's (1983) operationalisation. Although Lumpkin and Dess (1996) identify two further dimensions of competitive aggressiveness and autonomy, to characterise EO, researchers agree that EO is a nexus of proactiveness, innovativeness and risk-taking (Wiklund, 1999; and Semrau, et al., 2016). Since Miller's (1983) three-dimensional model has been utilised by numerous empirical investigations (e.g., Covin andand Slevin, 1989; Hansen et al., 2011; Kemelgor, 2002; Wiklund and Shepherd, 2005; Madsen, 2007; Zahra and Garvis, 2000; Gupta and Gupta, 2015), this study follows this approach.

### 2.2.2 Entrepreneurs

Zimmer and Scarborough (2002) and Brettel et al. (2015) considered successful entrepreneurs to be: strategists; proactive leaders; well-motivated people with high flexibility that use strategic planning in the process of decision-making; successful and skilled managers with

sufficient experience in the business; self-confident individuals who rely on their own motivationand begin and finance their own business. Along similar lines, Burns (2007) argued that entrepreneurs are proactive people who: can recognise opportunities and make decisions with high energy; often take a greater risk in their decision-making; and tend to live with high uncertainty to achieve their goals.

According to Analoui and Karami (2003) and Real et al. (2014) successful entrepreneurs are hard-working people who have personal financial resources and have enough motivation to start a business. Moreover, they are strong planners and skilled organisers with a technical knowledge background and sufficient experience.

Bjerke (2007, p.83) argues that "entrepreneurs see opportunity where other people only see problems if anything at all". Also, Braunerhjelm (2011, p.165) believes that "the entrepreneur is innovative and perceives and creates new opportunities". Many researchers have been interested in the factors associated with entrepreneurial performance (Zahra, 1996; Davidsson et al., 2002; Ozcan and Eisenhardt, 2009).

Entrepreneurs are generally regarded as risk takers in terms of their decision-making and business activities. Brockhaus (1980) described entrepreneurs as willing to take calculated business risks that non-entrepreneurs viewed as higher risk. Later research on risk-taking proposes that entrepreneurs view certain business situations more optimistically and with more confidence than do non-entrepreneurs (Paligh and Bagby, 1995; Busenitz, 1999; Semrau et al., 2016) leading to the contention that entrepreneurs may view risk differently than non-entrepreneurs. However, consistent with Miller (1983) and Covin and Slevin (1989), firm-level entrepreneurial characteristics are exhibited by a pioneering pattern of decision making under uncertainty, reflective of risk at a level greater than that exhibited by a conservative, follower pattern.

There are a number of studies in the literature that emphasise risk taking as a main characteristic of successful entrepreneurs (Semrau, et al., 2016; McClelland, 1961; Timmons, 1978; Welsh and White 1981). Risk-taking entails the willingness to pursue opportunities that have a substantial likelihood of producing losses or significant performance discrepancies (Morris, Kuratko and Covin, 2008). Risk-taking is normally associated with entrepreneurship because the concept of entrepreneurship in its original form includes the assumption of personal risk-taking (Lumpkin and Dess, 1996). At firm level, risk-taking refers to the tendency to support projects with uncertain expected returns (Walter, Auer and Ritter, 2006). In the following section, the key concept of entrepreneurial orientation will be discussed followed by its dimensions.

The literature focused on the features of entrepreneurship, characteristics of successful entrepreneurs, and trait as:

Table 2:1: characteristics of successful entrepreneurs

| **Bridge et al., (2009)** | **Bjerke (2007)** |
|---|---|
| • **Risk taking tendency** | • Responsibility |
| • **Achievement motivation** | • Opportunity obsession |
| • **Locus of control** | • Desire for immediate feedback |
| • **Need for autonomy** | • Future orientation |
| • **Determination** | • Tolerance of ambiguity |
| • **Initiative** | • Over optimism |
| • **Creativity** | • High commitment and leadership |
| • **Self confidence** | |
| • **Trust** | |

### 2.2.3 Entrepreneurial Orientation

Entrepreneurial orientation refers to a firm's strategic organisational posture, capturing specific entrepreneurial aspects of decision-making styles, methods, and behaviour (Lumpkin and Dess, 1996; Wales, Gupta, et al., 2013; Wiklund and Shepherd, 2003). As such, it is a driving force for the organisational pursuit of entrepreneurial endeavours and activities (Covin and Wales, 2012). EO is one of the most frequently applied firm-level constructs in entrepreneurship research (Anderson, Kreiser, Kuratko, Hornsby, and Eshima, 2015; Wales, Monsen, and McKelvie, 2011; see, for an overview, the 2011 special issue on EO in Entrepreneurship Theory and Practice, Covin and Lumpkin, 2011). Consistent with the majority of the extant EO research, this research considers EO to encompass three dimensions, namely innovativeness, proactiveness, and risk taking (cf. Kreiser et al., 2013; see also the recent literature reviews by Wales, Gupta, et al., 2016). These three dimensions best represent the conceptual view of an entrepreneurial orientation (George and Marino, 2011), even though other conceptualisations add additional dimensions (e.g., Lumpkin and Dess) or exclude individual dimensions (e.g., Merz and Sauber, 1995). Within the EO framework, innovativeness refers to a tendency to engage in creative processes, experimentation, and the introduction of new products and services, thereby deviating from established practices (Lumpkin and Dess, 1996; Rauch et al., 2009). Proactiveness refers to an opportunity-seeking, forward-looking behaviour that incorporates acting on future needs and trends ahead of competitors, thereby actively entering new product/market spaces, creating first-mover advantages, and seeking market leadership positions (Anderson et al., 2015; Lumpkin and Dess; Wiklund and Shepherd, 2003). Risk taking refers to a tendency toward engaging in high-risk activities with chances of high returns, and also in bold actions in uncertain environments (Covin and Slevin, 1989; Rauch et al., 2009).

Many scholars have recognised the importance of entrepreneurial activities within existing organisations (Dess et al., 2003; Snow, and Kandemir, 2003; Kanter, 1983; Miller and Friesen,

1982). EO is regarded as a critical organisational process that contributes to firm survival and performance (Dimitratos and Plakoyiannaki, 2003; Hitt, Ireland, Camp, and Sexton, 2001). It also can be seen as combining existing resources in new ways to develop and commercialise new products, move into new markets, and/or service new customers (Hitt et al., 2001).

While EO has been variously defined (e.g. Miller, 1983; Covin and Slevin, 1988; Lumpkin and Dess, 1996), that of Covin and Slevin (1988) which is based on the aspects of innovativeness, risk-taking and proactiveness, will be adopted. Lumpkin and Dess (1996), on the other hand, describe EO as the "propensity to act autonomously, innovate, take risks, and act proactively when confronted with market opportunities" (p. 137). These definitions represent the two most widely used bases for perceiving an EO at least in terms of the relevant dimensions. Based on the views of Miller (1983) and Covin and Slevin (1988), EO consists of three dimensions, which are innovativeness, risk-taking, and proactiveness, whereas Lumpkin and Dess (1996) perceive EO to consist of five dimensions, which in addition to the ones of Miller (1983) are autonomy and competitive aggressiveness.

Different research has attempted empirically and theoretically to investigate entrepreneurship from different approaches. Yusuf & Albanawi, (2016) research how entrepreneurship influences the economy of Saudi Arabia, and conclude that the government of Saudi Arabia should endeavour to promote an entrepreneurial culture in the country and call for future empirical research which should focus on promoting entrepreneurship as one way of enhancing the economic development. Kayed and Hassan (2011) showed research evident that the reforms have failed to include the entrepreneurship sector, thus failing to attend to one of the most pressing challenges facing the country and conclude that there is a significant, but neglected, role entrepreneurship should play in the development of the country. In particular, the mediating role of dynamic theories are strongly suggested for future research, as there is a wide gap in the literature. (Ali, Sun y Ali, 2017).

Ahmad (2012) conducted a study trying to understand entrepreneurship in SMEs in the Kingdom of Saudi Arabia and concluded that there was a lack of academic research, and that KSA would benefit from empirical research studies. Another call for research from Cassol, Gonçalo, & Ruas (2016) suggests that an application of a theoretical framework to Saudi SMEs is needed. Also, Mutahar, Rasli & Al-Ghazali (2015) stated that in the context of Saudi Arabia, organisational performance and learning, which exploration and exploitation is a part of, needed more empirical research. Kantur, (2016) was measuring the strategic entrepreneurship at the firm level, and called for future research assessing the mediating influence of different organisational factors.

This study adopts the former definition for two fundamental reasons. The first reason is that there are more studies which have adopted only the three dimensions. Thus, using this definition improves the comparability of the results of this study. Secondly, in their analysis of the EO dimensions, Kreiser, Marino and Weaver (2002) suggest that the introduction of the two newer dimensions does not add much value to EO, which supports the three-dimensional approach. Additionally, when examining the different dimensions separately, the three initial ones have been shown to have the strongest link to firm performance (Hughes and Morgan, 2007; Gupta and Gupta, 2015), which also supports excluding autonomy and competitive aggressiveness.

### 2.2.4 Entrepreneurial Orientation Dimensions

The specific dimensions of EO were introduced for the first time by Miller (1983). Accordingly, Miller (1983) identified the salient dimensions of EO as innovativeness, risk-taking, and proactiveness. Miller (1983) suggested that only firms that possess all three dimensions (i.e. are innovative, risk-taking, proactive) to a similar extent should be

considered as entrepreneurial. The following table shows the dimensions of EO.

Table 2:2: Dimensions of Entrepreneurial Orientation

| Dimension | Definition |
|---|---|
| Innovativeness | **A willingness to introduce newness and novelty through experimentation and creative processes aimed at developing new products, services and processes.** |
| Risk-Taking | **Making decisions and taking action without certain knowledge of probable outcomes; some undertakings may also involve making substantial resource commitments in the process of venturing forward.** |
| Proactiveness | **A forward-looking perspective characteristic of a marketplace leader that has the foresight to seize opportunities in anticipation of future demand.** |

#### 2.2.4.1 Innovativeness

According to Lumpkin and Dess (1996), Schumpeter (1942) was one of the first to highlight the role of innovation in the entrepreneurial process. Schumpeter (1942) describes a process of "creative destruction" (p. 83), where wealth creation occurs through the disruption of existing market structures due to introduction of new goods and/or services that cause resources to move away from existing firms to new ones thus allowing the growth of the new firms.

Innovativeness reflects a firm's propensity to engage in and support the generation of new ideas and creative processes that may lead to new products or services, technological processes and new markets (Lumpkin and Dess, 2001; Rauch et al., 2009). Hult, Hurley and Knight (2004) suggested that innovativeness plays a significant role in solving business problems and challenges, which in turn provides firms with the ability to succeed.

Lumpkin and Dess (1996) argue that the process of creative destruction is initiated by an entrepreneur, which makes innovation an important success factor within EO. Furthermore,

this link between entrepreneurship and innovativeness is supported by the results of Shane, Kolvereid and Westhead (1991) and Real et al. (2015), who found that innovation is among the key motives for starting a business. Lumpkin and Dess (1996) state that "innovativeness reflects a firm's tendency to engage in and support new ideas, novelty, experimentation, and creative processes that may result in new products, services, or technological processes" (p. 142). Innovativeness refers to willingness to move forward from existing technologies or practices and explore beyond the current borders (Kimberly, 1981; Gupta and Gupta, 2015) and shows that a firm is putting effort into introducing new products to the market (Zahra, 1993). Thus, innovativeness is vital for maintaining a firm's viability because it is the source of ideas that lead to improvements and new product development, and thus helps in sustaining a thriving firm (Lumpkin, Brigham, and Moss, 2010; Bierwerth, et al., 2015).

One of the key factors that have been widely used in the literature to distinguish and identify entrepreneurial performance is firm innovativeness. While there are different definitions of innovativeness in the literature, it has been described as: the creation of new products or processes (Cumming, 1998); enhancing product quality or value (Knox, 2002); and generating new ideas or knowledge (Chaharbaghi and Newman, 1996; McAdam et al., 1998; Urabe et al., 1998; Bierwerth, et al., 2015).

Innovativeness is also very important because maintaining competitive advantage in rapidly changing markets is crucial. Innovativeness can be a key to this, because it can be a source of significant progress and growth for a firm (Dess and Lumpkin, 2005).

Innovativeness refers to a firm's tendency to engage in and support new ideas, novelty, experimentation, and creative processes that may result in new products, services, or technological processes (Lumpkin and Dess, 1996; Bierwerth, et al., 2015). The extant

literature presents numerous ways to classify innovation, including continuous versus discontinuous, incremental versus radical, and technical versus administrative. However, perhaps the most general classification is that of technological innovation versus product market innovation. A fundamental element of entrepreneurship is innovation which is captured in the form of creating new products or processes (Covin and Miles, 2006; Schumpeter, 1934; Bierwerth, et al., 2015). Lumpkin and Dess (2001) define entrepreneurial innovation as "[…] creativity and experimentation in introducing new products/services, and novelty, technological leadership and R and D in developing new processes" (p. 431). With respect to corporate entrepreneurship, Covin and Miles (2006) argue that innovation is central without which the notion does not exist. Hence, to be entrepreneurial or exhibit an EO firms must exhibit behavioural actions that are exemplars of innovation irrespective of the presence of other dimensions of entrepreneurial behaviour.

Innovative enterprises are able to adopt new ideas or behaviours which affect all their organisational activities, such as production processes, technology, structure and administrative systems and even organisational plans (Damanpour, 1991), but focus mainly on product, process and administrative innovations. Furthermore, due to the significant national role of SMEs in technological and economic development, there is much interest in the literature (Ndubisi and Iftikhar, 2012).

SMEs are successful innovators despite their limited resources (Nooteboom, 1994). Their flexibility and small size enable them to 'move faster' than large companies, and they have a more proactive and risk-taking nature (Ndubisi et al., 2005). Innovation enables SMEs to enter niche markets and achieve superior customer value which leads to competitive advantages (Porter, 1980; Lieberman and Montgomery, 1988; Bierwerth et al., 2015). The significant values of entrepreneurial firms in regard to innovation can be classified as risk taking and pro-activeness (Nasution et al., 2011; Ndubisi and Iftikhar, 2012; Bierwerth, et al., 2015).

Johne and Davies (2000) suggested three main types of innovation:

1. Product innovation, which refers to new product options and their development. It is commonly conducted in technology-driven firms to facilitate their competitive positioning.
2. Process innovation, which refers to the improvement of internal capabilities, including firm's operations and capacities.
3. Market innovation, which refers to the selection of new market segments that are best served by particular firms.

Entrepreneurial SMEs can improve their performance by offering innovative products and operating in attractive niches. Accordingly, the literature on the relationship between entrepreneurship and innovation suggests that entrepreneurial firms are more innovative because of their market-orientated culture (Slater, 1997). Moreover, entrepreneurial firms with a learning and integrated market orientation are also often successful innovative enterprises (Nasution et al., 2011).

#### 2.2.4.2 Proactiveness

Proactiveness can be described as taking initiative by anticipating and pursuing new opportunities related to future demand and by becoming involved in emerging markets (Lumpkin and Dess, 1996). Being proactive implies behaviours that can be interpreted as taking the lead vis-à-vis competitors and perceived business opportunities. Covin and Slevin (1989) related proactiveness to aggressive action toward competitors when trying to gain or maintain competitive advantage. They compared this stance to that of a passive and reactive approach that might be taken by a more conservative firm. In a similar way, proactiveness exhibits

characteristics of leadership in the marketplace working to influence the task environment (Lumpkin and Dess, 2001).

The literature assumes entrepreneurship to be a combination of innovation, risk taking and proactive behaviours that are essential for creating value in any enterprise (McDougall and Oviatt, 2000). Proactivityis a characteristic of entrepreneurship (Hornaday and Aboud, 1971); Bierwerth, et al., 2015) and is a quality related to "initiative" (Schumpeter, 1942). Moreover, proactivity has been defined as an "opportunity-seeking" and "forward-looking" perspective for developing new products for achieving competitive advantage (Lumpkin and Dess, 2001). Proactivity enables firms to anticipate future market demands and react more quickly to environmental changes than their competitors. The main signs of proactivity in entrepreneurial enterprises include creating new ideas, flexibility, developing and implementing new processes, launching new products, and effective communication (Morris and Kuratko, 2002; Nasution and Mavondo, 2008; Real, et al., 2015).

Entrepreneurs and entrepreneurial firms continually scan the environment, which enables them to be aware of and adapt to new opportunities in business (Ndubisi and Iftikhar, 2012). Thus, proactivity is an important dimension of entrepreneurship which significantly affects firm performance, and risk taking, which leads to high performance in entrepreneurial firms (Ndubisi and Iftikhar, 2012; Kickul and Gundry, 2002). Furthermore, Nasution et al. (2011) found that there is a relationship between innovation and proactivity: being proactive enhances a firm's ability to be creative in developing products.

Venkatraman (1989) defined proactiveness as opportunity seeking, related or not to existing business activity, new products or brand introductions before competitors, and strategic

discontinuance of operations in the face of declining markets. Entrepreneurs act ahead of non-entrepreneurs and entrepreneurial firms are similarly proactive.

Liebermann and Montgomery (1988) state that using a first-mover strategy is the best way to capitalise on a market opportunity. If a firm spots an opportunity in the market and is the first to act upon it, it can make abnormal profits and benefit from brand recognition (Lumpkin and Dess, 1996; Anderson and Eshima, 2013). Thus, proactiveness, which refers to taking initiative, anticipating and carrying out new opportunities, and creating new markets or participating in emerging ones, is also associated with entrepreneurship, and is an important dimensions of EO (Entrialgo, Fernandéz and Vázquez, 2000; Walter, Auer and Ritter, 2006; Anderson and Eshima, 2013).

According to Lumpkin and Dess (1996), proactiveness is significant for EO because of its forward-looking perspective. A proactive firm is able to identify possible emerging problems and find solutions for them (Dess and Lumpkin, 2005). This means that proactiveness can be key for competitive advantage, because competitors need to respond to the successful initiatives of the pioneer (Dess and Lumpkin, 2005; Arend, 2014). The pioneer may also succeed in locking in customers due to high switching costs (Smith, Ferries and Grimm, 2001; Arend, 2014).

According to Venkatraman (1989), proactiveness is not just about what is seen in the future in terms of new products and opportunities, but also requires a continuing process of critical evaluation of existing parts of the business. Proactiveness refers to processes aimed at foreseeing and acting on future needs by searching for new opportunities which may relate to present operations or differ from them. Thus, proactiveness can refer to the introduction of

completely new products and brands before competitors, and also to eliminating those operations which have turned or are turning unprofitable.

#### 2.2.4.3 Risk Taking

The concept of risk-taking has been related to entrepreneurship since the 1800s, when the term entrepreneurship was first discussed and defined by Cantillon (Palich and Bagby 1995; Gilmore, Carson and O'Donnell, 2004; Roux and Couppey, 2007). Risk-taking as a dimension of EO is considered as one of the major attributes of entrepreneurship (Venkatraman, 1989; Aloulou and Fayolle, 2005).

At the firm level, risk-taking refers to a willingness to engage in calculated business-related risks in the marketplace, even when their outcomes are uncertain (Lumpkin and Dess, 2001). Firms which engage in risk-taking behaviour are described as being bold and aggressive in pursuing opportunities, since they are ready to incur large and risky resource commitments in the hope of obtaining high returns (Miller 1983; Lumpkin and Dess, 1996). These commitments include activities such as borrowing heavily, entering unknown markets and committing a high percentage of resources to projects with uncertain outcomes (Lyon, Lumpkin and Dess, 2000).

Risk taking is deemed to be an important factor in determining a firm's entrepreneurial performance, and its elements include:

- the tendency of managers to take risks and to showing high tolerance of failure (MacMillian et al., 1986; Sathe, 1989; Sykes, 1986; Sykes and Block, 1989; Arend, 2014; Semrau, et al., 2016);
- actions such as entering new markets, or allocating a large amount of resources to developing new products with uncertain outcomes (Lumpkin and Dess, 2001);

- bold moves into unknown business areas and/or the commitment of significant resources to business activities under conditions of uncertainty (Lumpkin and Dess, 2001); and
- indicates the proclivity for undertaking high-risk projects with chances of high returns or high losses and implies a willingness to act boldly even without knowing all potential consequences (Wiklund and Shepherd, 2003).

Risk taking is argued to be the main characteristic of successful entrepreneurs (McClelland, 1961; Welsh and White, 1981; Morris, 1998). While Brockhaus (1980) noted that there are no statistical differences in entrepreneur's risk preference patterns, more recent studies show that risk taking plays a key role in enhancing firm innovation and technology (Ndubisi et al., 2005; Nasution et al., 2011). Therefore, it has been suggested that risk taking has a significant effect on entrepreneurial performance and the innovation capabilities of enterprises (Ndubisi and Iftikhar, 2012). Furthermore, the finding of Morris (1998) demonstrated that entrepreneurs have a tendency to calculate the risk which involves their efforts, to find a way to reduce and share the risks.

According to Dess and Lumpkin (2005), organisations and their executives face business, financial, and personal risks. Business risk refers to the risk of entering untested markets, or committing to unproven technologies (Dess and Lumpkin, 2005). Financial risk is related to heavy borrowing or committing a significant amount of resources for growth (Dess and Lumpkin, 2005). Firms with an EO often engage in risky activities, such as high leveraging and large resource commitments in the desire to gain high returns by pursuing opportunities in the market (Lumpkin and Dess, 1996).

Finally, personal risk is related to an individual, normally an executive, who decides to favour a certain strategic course of action. The risk here stems from the influence the executive has on

the direction of the company, which can, in case of failure, also lead to personal consequences (Dess and Lumpkin, 2005; Semrau, et al., 2016).

In practice, while all business endeavours entail some degree of risk (Lumpkin and Dess, 1996), risk taking is not gambling in the context of EO (Dess and Lumpkin, 2005), but moderated and calculated (Morris, Kuratko and Covin, 2008). Thus, it does not refer to extreme and completely uncontrolled risky endeavours (Morris, Kuratko and Covin, 2008) even though the consequences of an act cannot be known (Dess and Lumpkin, 2005). The consequences of different opportunities are examined and different scenarios created in order to decrease the level of risk (Dess and Lumpkin, 2005).

### 2.2.5 Dynamic Capabilities

The study of DCs, also known as (i) absorptive capability (Cyert and March, 1963), (ii) core competence (Collis, 1994), and (iii) organisational routine (Cohen and Levinthal, 1989), emerged as a complement to the RBV in an attempt to explain competitive advantage in rapidly changing environments. The various definitions of DCs are now considered, followed by a discussion of its relationships with absorptive capacity and competencies; routines; the definition of DCs used in this study; and ending with the concept of dynamics.

The following section discusses the dimensions of DCs (Exploration, Exploitation and Reconfiguration).

#### 2.2.5.1 Exploration

Exploration entails the search for new and alternative sources by firms and business establishments. March (1991, p. 85) defines exploration as “experimentation with new alternatives having returns that are uncertain, distant, and often negative” while Levinthal and March (1993, p. 105) define exploration as “the pursuit of knowledge, of things that might come to be known”. However, exploring and exploiting factors have to be balanced for an

optimal level of growth opportunities (Juha, 2009; Lavie, Stettner, and Tushman, 2010). Exploration as a factor has been argued to be an activity that helps organisations to grow by bringing in new ways of running and managing the business (Uotila et al., 2009). Further it means the importer's ability to adopt new processes, products, and services that are unique from those used in the past. Exploration activity includes things captured by terms such as search, variation, risk taking, experimentation, and it emerges from the importer's drive to discover something new (Yalcinkaya et al., 2007) play, flexibility, and discovery (He and Wong, 2004). Exploration is an important factor for organisations, and learning is a part of the activities that lead to growth of organisational performance. Though most of this information and arguments are based on exploration by large corporations, similar research on exploitation and exploration by SMEs (Abebe and Angriawan, 2014, Cegarra-Navarro and Dewhurst, 2007; Lubatkin et al., 2006; Jones and Macpherson, 2006) show similar results – that effective exploration which does not deny exploitation of resources will invariably have a positive impact on growth of a firm.

#### 2.2.5.2 Exploitation

Exploitation is the process that includes aspects such as refinement, choice, efficiency and selection. Lavie, Stettner, and Tushman, (2010) argue that exploitation is an essential factor for organisations and entails the enhancement of productivity and efficiency. Most SMEs will tend to invest more in exploitation than exploration activities. This is because SMEs lack resources to undertake exploration activities at the expense of exploitation processes (Cegarra-Navarro and Dewhurst, 2007). Exploitation is defined as "the use and development of things already known" (Yalcinkaya et al., 2007).

Learning capability can be conceived as the principal means of attaining strategic renewal. Renewal requires that organisations explore and learn new ways while at the same time exploiting what they have already learned (March, 1991). Teece et al. (1997) argue that learning is a very important process which, through experimentation and repetition, leads to the better and quicker resolution of specific problems and at the same time enables firms to identify new production opportunities. Learning processes are dynamic and multi-level. Although insight and innovative ideas may occur to individuals, the individually generated knowledge is shared within the organisational context and then some of it becomes institutionalised as organisation artefacts.

#### 2.2.5.3 Reconfiguration

Reconfiguring the resource base is the firm's capacity to recombine resources and operating capabilities "as the enterprise grows, and as markets and technologies change, as they surely will" (Teece, 2007, p. 1335). The ability to reconfigure internal resources and competences as a means of addressing rapid change in business environments is essential in determining firm performance (Teece et al., 1997; Zott 2003). Organisations have to continuously reconfigure their activities to meet changing demands in their internal and external environments (Siggelkow, 2002). The capability to continuously and purposefully reconfigure the existing resource base enables the firm to transform and exploit its existing knowledge. (Makkonen et al., 2014). Entrepreneurially oriented firms also create opportunities through their actions. In order to take advantage of these opportunities, they often also have to reconfigure their asset base. New processes, business models, complementary assets and methods are needed in order to capitalise on opportunities. Thus, the firm's ability to build new capabilities, transform its asset base and reconfigure its processes and structures in order to achieve new valuable

resource combinations is crucial for a firm's performance in changing environments (Teece et al., 1997).

Firms that are active in implementing new strategies, methods and processes in order to match their internal organisation with the requirements of the international operating environment are expected to succeed better in international activities than their more passive counterparts (Real et al., 2012). However, in terms of asset-based reconfiguration, being active does not necessarily mean being efficient. Thus, it is clear that assessing the number of reconfiguring activities and the success in implementing organisational changes reveals differences in the former. Not all firms that are active in changing their structures and strategies are necessarily equally proficient in these change activities. In the orchestrating of change, interactions between several organisational elements, such as practices, management style, values and organisation structure, may have an effect on success (Sheppeck and Militello, 2000). There may be substantial differences between organisations in their ability to implement new routines or techniques (Edmondson et al., 2001). Thus, it is not only being active, but also being capable of orchestrating change (Teece et al., 1997).

### 2.2.6 Firm Performance and Entrepreneurship Orientation

The relationship between EO and performance in both new and established firms is a central focus of interest for studying EO, and it is generally agreed that firms that behave entrepreneurially perform better than those with a more conservative orientation (Anderson and Eshima, 2013; Covin, Green and Slevin, 2006; Covin and Lumpkin 2011; Covin and Slevin, 1991; Rauch et al., 2009; Wiklund and Shepherd, 2003). However, while numerous studies have shown that EO, directly or indirectly, has a positive relationship with firm performance (e.g., Krauss et al. 2005; Wiklund and Shepherd 2005), other researchers question whether investigating the direct effect of EO on firm performance will provide a comprehensive description of the relationship (e.g., Wiklund and Shepherd, 2005; Wang,

2008). Therefore, most researchers have applied other variables as moderators or antecedents to the model of EO-firm performance (Covin and Slevin 1991). The use of appropriate measures for assessing the performance of a small firm is thus an important consideration, for which the EO literature offers no solid consensus (Wiklund, 1999). It is unsurprising therefore that to date, the findings of investigations into this relationship have been mixed.

The importance of EO and its influence on firm performance have been highlighted both conceptually and empirically (Covin and Slevin, 1991; Lumpkin and Dess, 1996; Anderson and Eshima, 2013). Various studies have shown that EO, indirectly has a positive relationship with firm performance (Kraus, Harms, and Schwarz, 2005; Wiklund and Shepherd, 2005; Anderson and Eshima, 2013). This positive relationship has been verified empirically, (Anderson and Eshima, 2013; Lee and Pennings, 2001; Lumpkin and Dess, 1996, 2001; Wiklund and Shepherd, 2003, 2005; Wiklund J., 1999). The positive effect is argued to arise from the first–mover advantage that ultimately translates into better financial results (Wiklund,1999). Thus, it may be beneficial for a firm to adopt an EO, since an overall innovative, proactive, and risk-taking strategic posture has instrumental importance (George and Marino, 2011).

While it is often believed that EO has a universally positive influence on firm performance (Wales et al., 2013), several researchers (e.g., Javalgi and Todd 2011; Miller 2011) have noted that extant studies examine only EO's current or contemporaneous effects while ignoring its long-term consequences. Attention to the performance consequences of EO over the long term is an important issue because adopting and embracing EO is a time-consuming strategic investment (Covin and Slevin, 1991), and the positive impact of EO on performance has been argued to increase over time (Wiklund, 1999; Zahra and Covin, 1995). While this indicates that it may be worthwhile for SMEs to use their scarce resources to adopt EO, these positive effects

are argued to be context specific and may change independently of each other in a given organisational context (Lumpkin and Dess, 1996; Real et al., (2015).

Rapid changes in the business environment, where both product and business model life cycles get shorter and future profits from existing operations are uncertain, mean that a firm's profit streams are under constant threat and new opportunities must be constantly sought, and entrepreneurial strategies developed (Rauch, Wiklund, Frese, and Lumpkin, 2009; Wiklund and Shepherd 2005). In these circumstances, EO can boost a firm's profitability by ensuring that they constantly seek new opportunities (Rauch et al., 2009), which enable firms to create first-mover advantages, charge premium prices, and skim the top of the market ahead of their competitors (Stam and Elfring, 2013). Thus, firms with which have a strong EO can create a substantial advantage and differentiate themselves from their competitors, thereby facilitating both market share and profitability.

EO helps firms obtain and use information about potential customers, retain existing customers by providing new products, develop an appropriate strategic plan, and implement the plan in anticipation of emerging and unarticulated market trends ahead of their competition (Keh et al., 2007).

In order to address as yet unknown customer needs, firms must engage in new exploration, support new ideas, experiment, and stimulate creativity, all of which are essential elements of EO (Covin et al., 2006). Entrepreneurial firms can seize business opportunities in the market proactively and obtain first-mover advantages by entering unexplored domains. Customers are often willing to pay premiums for innovations and improved products, especially when the competition does not provide similar offerings (Robinson and Min, 2002).

Entrepreneurial attitude and conduct are important in utilising new and existing knowledge when an organisation discovers opportunities (Wiklund and Shepherd, 2003). It is argued that there is a correlation exists between EO and knowledge creation (Vidic, 2013), and that EO

organisations often directly support generative learning by identifying and exploring value-creating opportunities (Cui and Zheng, 2007; Chaston and Scott, 2012). Further, the sharing of knowledge within the company leads to knowledge creation and the diffusion of knowledge across an entrepreneurial firm (Cohen and Levinthal, 1990). The following section shows the relevant theories that helped the researcher to develop the model.

## 2.3 Theories

The section shows a review of the literature on Resource Based View theory as it is considered the most relevant to the study. Then, it discusses the Dynamic Capabilities theory which is the ground of the model established for the study. This section will be followed by presenting the research model.

### 2.3.1 Resource Based View (RBV)

There is a fundamental question which asks why firms are different and how they achieve and sustain competitive advantage by deploying their resources. Penrose (1959) argued that it is the heterogeneity, not the homogeneity, of the productive services available from its resources that gives each firm its unique character. This notion of heterogeneity is the basis of the RBV. The central proposition of RBV is that firms are heterogeneous in terms of the strategic resources they own and control. It is suggested that this heterogeneity is an outcome of: resource-market imperfections (Barney, 1991); resource immobility (Barney, 1991); and firm's inability to alter their accumulated stock of resources over time (Carroll, 1993).

An individual firm can be conceptualised as a unique bundle of tangible and intangible resources and capabilities (Wernerfelt, 1984). Resources, which are the basic unit of analysis for RBV, include:

- those assets that are tied semi-permanently to the firm (Maijoor and Witteloostuijn, 1996; Wernerfelt, 1984; Li and Liu, 2014);

- financial, physical, human, commercial, technological, and organisational assets used by firms to develop, manufacture, and deliver products and services to its customers (Barney, 1991);
- resources which can be classified as tangible (financial or physical) or intangible (i.e., employee's knowledge, experiences and skills, firm's reputation, brand name, organisational procedures); and
- resource durability, non-tradeability, and idiosyncratic nature of resources (Barney, 1991; Kaufman, 2015; Kozlenkova et al., 2014; Ismail et al., 204; Amit and Schoemaker, 1993; Mahoney and Pandian, 1992; Peteraf, 1993; Rumelt, 1984).

According to RBV, firms that possess bundles of resources that are VRIN will enjoy sustained competitive advantages and, consequently, superior firm performance (Barney, 1991; Wernerfelt, 1984). The value and rarity of resources allow firms to create new economic value, while inimitability and non-substitutability provide the isolating mechanisms that lock in rents associated with those resources (Barney; Peteraf, 1993; Rumelt, 1984). Studies assessing RBV have been largely supportive of its predictive power on performance. While Newbert (2007) suggested that RBV "has only received modest support overall" (p121), Crook, Ketchen, Combs, and Todd (2008) employed meta-analysis and found a substantial correlation between VRIN resources and performance

Alvarez and Busenitz (2001) argue that the RBV theory can inform and extend current research on entrepreneurship through the entrepreneurial process of cognition, discovery, understanding market opportunities, and coordinated knowledge that inputs become heterogeneous outputs. They attach importance to the role of heuristics-based logic which enables entrepreneurs to quickly learn about and assimilate the implications of new changes for specific discoveries. Entrepreneurial opportunities emerge when certain individuals have insights into the value of

resources that others do not. Entrepreneurial alertness, entrepreneurial knowledge, and ability to coordinate resources are viewed as resources in their own right. Causal ambiguity is seen as the essence of entrepreneurship because the entrepreneur's expanding knowledge base and absorptive capacity through experience and learning are key to achieving growth. The authors also suggest that social complexity is central to entrepreneurship as it may be essential to the exploitation of complex technologies and unique to certain types of entrepreneurs and hence difficult to imitate. From the point of view of the firm, they suggest that the entrepreneur fulfils a crucial role in recognising the value and opportunities presented by specialist knowledge and integrating it to create rents (Barney, 1999).

The significance of the resource perspective as a new direction in the field of strategic management was recognized by Wernerfelt (1984), who suggested the evaluation of firms in terms of their resources, rather than their product markets, could lead to insights that differ from traditional perspectives. His work on the development of economic tools for examining and managing the relationship between firm resources and profitability was extended by Rumelt (1984) and Barney (1986), who focused on the analysis of the firm's internal resources and their link to competitive advantage. Rumelt (1984) outlined a strategic theory of the firm that contained many ideas that later were encapsulated by the RBV, including the definition of the firm as a bundle of resources that vary in value depending on the context in which they are utilised (Barney and Arikan, 2001). Over the last decade, much of the strategy literature has placed an emphasis on resources internal to the firm as the principal driver of firm profitability and strategic advantage. This shifts attention towards RBV theory: firstly because of the major shift in customer preferences (Bettis and Hitt, 1995); and secondly, because the increasing rate of change places increasing pressure on firms to react more quickly, since time is often seen as source of competitive advantage (Stalk and Hout, 1990; Liao, et a., 2015). These two reasons

suggest that while firms may look inwardly for strategic opportunities, they must, at the same time, reconceptualise how they think of industries and how they define competitors.

### 2.3.2 Dynamic Capabilities (DCs)

DCs have been variously defined in terms of three levels of a manager's perceptions of environmental dynamism. At the first level, it found incremental dynamic capabilities, the second level comprises renewing dynamic capabilities, and at the third level are regenerative dynamic capabilities (Ambrosini and Bowman,2009); the capability to innovate faster or better (Collis ,1994) organisational and strategic routines by which firms achieve new resource configurations as markets emerge, collide, split, evolve and die (Eisenhardt and Martin, 2000); the creation of a difficult-to-imitate combinations of resources (Griffith and Harvey, 2001); the subset of competences and capabilities which allow the firm to create new products and processes and respond to changing market circumstances (Helfat, 1997); and the capacity of an organisation to purposefully create, extend or modify its resource base (Helfat et al., 2007). There are a number of interesting tensions regarding the definitions of DC.

- Ambrosini and Bowman (2009) identify DCs as processes which influence firm resources, whereas Wang and Ahmed (2007) argue that DCs are not just processes but are a capacity embedded in processes because processes can be imitated by competitors and if they can be imitated, they are not DCs.
- However, following Eisenhardt and Martin (2000), Wang and Ahmed (2007) also claim that while DCs can be idiosyncratic in their details, they can also have commonalities across firms.
- Another question in defining DCs is whether or not they are a response to dynamic environments. For example, Aragon-Correa and Sharma (2003), Kor and Mahoney (2005), Teece, Pisano and Schuen (1997) and Wang and Ahmed (2007) maintain that DCs address rapidly changing environments.

- However, arguing against the above view, Zollo and Winter (2002) claim that DCs should not be restricted to dynamic environments and DCs are a learned, and stable patterns of collective activity in pursuit of high effectiveness whether they are operating in dynamic environments or not.

The relationship between resources and DCs is also a subject of debate. It is argued that DCs lead to new resource configurations (Eisenhardt and Martin, 2000; Ambrosini and Bowman, 2009); Wang and Ahmed, 2007). In contrast Zahra, Sapienza and Davidson (2006) assume that, even though it is indirect, resources have an impact on the DCs of a firm. Reconciling this conflict, Cepeda and Vera's (2007) empirical study reveals that the input of DCs is an initial configuration of resources and operational routines, whereas the output of DCs is a new configuration of resources and operational routines. Thus, it seems that firm resources and DCs influence each other.

DCs differs from the more familiar term of absorptive capability (Cohen and Levinthal, 1990), which Zahra and George (2002) defined as a set of organisational routines and processes by which firms acquire, assimilate, transform and exploit knowledge to produce a dynamic organisational capability. Absorptive capability is an organisation's ability to understand new external knowledge, assimilate it, and apply it to commercial ends (Lane, Salk and Lyles, 2001).

The term DCs points to the concept of the capacity to renew competences so as to achieve congruence with the changing business environment (Teece, 1998). This distinguishes DCs from absorptive capability in that DCs is considered to be the systematic change of efforts and the cumulative effort of capabilities over time. In contrast, absorptive capability can be regarded as a static theory because it addresses the fundamental issues of firms' capability to acquire new and external knowledge and to assimilate such knowledge with existing and internal knowledge rather than accumulating it. Eisenhardt and Martin (2000) argue that while

much of the strategy literature is vague on the nature of DC, there are a number of specific examples from research into product development, strategic decision making, and resource allocation areas, based on the concept of routines.

The primary role of an organisation is to devise and establish routines that achieve knowledge integration (Grant, 1996). Routines refer to stable patterns of behaviour that characterise organisational reactions to various internal or external stimuli and bring about desirable changes in the existing set of operations. It is argued that that in a dynamic environment a firm's competitive advantage will rest on its internal routines that enable it to renew its stock of organisational capabilities (Teece and Pisano, 1994; Teece, Pisano and Schuen, 1997). DCs can therefore be perceived as the routines in an organisation that guide and facilitate the development of the organisation's capabilities (Eisenhardt and Martin, 2000). Three examples of this relationship are shown below.

Where a decision is made to upgrade the R&D process, many predictable and interrelated actions are initiated which will eventually conclude with the launch of the new R&D system. In this case, R&D routines are regarded as constitutive of DCs and enhance future performance.

Firms with interrupted past investments in R&D processes may have a weaker knowledge endowment and consequently a more limited assimilative capability over time. In contrast, firms which make a sustained effort to develop technological know-how may gain a strategic competitive advantage over their competitors who show weak commitment to building R&D capability.

An overall marketing capability can satisfy the current and future needs of customers who typically require persistent and timely investments in marketing. A firm's history of past investments in marketing can have continued economic value for the firm over time because these investments help the firm accumulate new knowledge more efficiently.

Therefore, R&D and marketing activities are related directly to DCs creation processes. This technique is also applied in the managerial literature (e.g. Kor and Mahoney, 2005; Thornhill, 2006).

Following this thinking, this research adopts the definition of DCs put forward by Teece, Pisano and Schuen (1997) as the processes for reconfiguring an organisation's resources and operational routines in response to the changing environment. Teece et al. (1997) stated that their motivation to develop the dynamic capability framework was to aid "understanding of how and why certain firms build competitive advantage in regimes of rapid change" (p. 509). This literature review reflects this framework through the use of evolutionary economics with its own grounding in organisational behaviour, and the RBV with its foundation in Ricardian economics.

Dynamic capabilities are directed towards strategic change and aligning the organisation with its environment (Zahra et al., 2006). They can conceptually be disaggregated into the firms' capacities to:

1) sense and shape opportunities, which this research adapted as exploration,

2) seize opportunities, which this thesis adapted as exploitation, and

3) redeploy and reconfigure (create, extend and modify) their resource base (Teece, 2007).

Without dynamic capabilities to convert resources into advantage, entrepreneurial resources do not translate into performance (cf., Zollo and Winter, 2000).

The attribution of DCs to superior firm performance has been criticised (Ambrosini and Bowman, 2009; Eisenhardt and Martin, 2000; Zahra, Sapienza and Davidson, 2006; Williamson, 1999). Zahra, Sapienza and Davidson (2006) suggest that DCs should be identified independently of firm performance and having DCs does not guarantee successful outcomes or vice versa. Wang and Ahmed (2007) also propose an indirect relationship between DCs and firm performance. Huang et al. (2012) identify three dimensions of DCs i.e. process, position

and path, where the process and position of DCs have been empirically verified as having a direct positive impact on the competitive advantage of firms as indicated by their sales. Excluding firm performance, this study adopts Teece, Pisano and Schuen's (1997) definition of DCs which is the firm's ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environments. This definition of DCs has been acknowledged to be broad enough for others to refine, reinterpret and expand the concept (e.g. Easterby-Smith, Lyles and Peteraf, 2009).

Adopting the approach of Teece et al. (1997), this study divides dynamic capabilities into: exploitation; exploration; and reconfiguration capabilities.

Firm competence lies in the effective and efficient exploitation of internal and external resources (Aoki, 1990). Iansiti and Clark (1994) found that knowledge exploitation capability positively affects firm performance when investigating the automobile and computer industry. The results indicate the contribution of the dynamic exploitation capability to performance improvement. Firm managers should consider the external industry and competitive environment to decide the operational strategy for exploitation of internal and external resources.

Porrini (2004) shows that the acquirers of firms can gain resource exchange and integration know-how through successful alliance activities and thus improve their performance. The results provide an example to demonstrate how integration capability positively mediates value resources into improved performance

Chen and Huang (2009), examine the effect of mediation on the dynamic capabilities of the relationship between entrepreneurial practices and performance. The role of dynamic

capabilities as leverage in improving organisational performance has been recognised and desired by all organisations. Most organisations believe that these DCs are only built on the side of human resources and their creation process is very complicated (Hall, 1993). This study tried to analyse the role of DCs in the organisation and strategic planning for performance of SMEs.

### 2.4. Conceptual Framework

This section outlines the theoretical framework, the determinants and framework conditions of the EO concept and considers the arguments and hypotheses in order to provide a basis for the conceptual development and empirical investigation of EO in firms. The relationships between DCs, and performance outcomes are then considered, which leads to the development of a conceptual model which is tested, refined, and validated in the subsequent quantitative research step.

This investigation responds to the calls made in the DCs literature for a better understanding of the interrelationship between EO, the resource base of the firm, and the firm's performance through DCs. The aim is to bring clarity to the notion of EO, its role and effects on firm performance as reflected in the conceptual model presented in this chapter. This model provides a more precise understanding of the firm`s EO and sheds light on its role and effects on firm performance and offers a description of the strategic pathways which firms can use to foster strategic re-combinations of existing resources as an important source for continuous innovation generation.

This study develops a conceptual model for EO in firms which: is based on a comprehensive literature review in the fields of resources and competence-based research; draws on existing theories from the entrepreneurship and strategic management spectrum.; reviews and aligns

current theories; and takes account of existing empirical studies in the wider field of firm performance.

This section comprises three sub-sections. The first is an examination of the DCs perspective to form the model`s theoretical base. In the second, the discussion is followed by a presentation of theoretical linkages between these selected characteristics of the resource base and firm performance, culminating in a subset of the study's hypotheses. The third investigates the effect of the EO dimensions on the performance of the firm through its capability of exploring, exploiting, and reconfiguration. This section closes with a statement of the subset of hypotheses to be tested in this research.

### 2.4.1 Development of the Conceptual Framework

The RBV of the firm is one of the most cited theories for explaining success of firms (e.g. Barney, 1991; Newbert, 2007; Kozlenkova et al., 2014). It views the firm as a unique combination of resources and capabilities, which are the sources of competitive advantage and superior performance (Barney, 1991; Peteraf, 1993). RBV sees capabilities as the complex bundles of skills that are embedded in organisational routines (Grewal and Slotegraaf, 2007; Teece et al., 1997). Resources are viewed as both stocks of assets possessed by the firm that are used as inputs to organisational processes (e.g. Peteraf, 1993) and the firm's strategic orientation, including market, learning, technology, and entrepreneurial orientation, which promotes superior performance (Gatignon and Xuereb, 1997; Noble et al., 2002; Gary et al., 2017).

The firm's strategic orientation reflects its philosophy on how to conduct business by encouraging appropriate behaviours which can lead to superior performance (e.g. Gatignon and Xuereb, 1997). EO is a form of strategic orientation that encourages attitudes such as being highly proactive toward market opportunities, tolerant to risk and receptive to innovations

(Zhou et al., 2005). As such, EO motivates the firm to embark on proactive and aggressive initiatives that may alter the competitive scene to its advantage and thus enable the achievement of enhanced performance (Atuahene-Gima and Ko, 2001; Avlonitis and Salavou, 2007; Vishal et al., 2014).

EO comprises: (1) innovativeness, (2) proactiveness, and (3) risk-taking (Covin and Slevin, 1989; Hughes and Morgan, 2007; Wiklund and Shepherd, 2003).

(1) Innovativeness

Innovativeness is the predisposition to be open to new ideas and favour change (Ahuja and Lampert, 2001; Hurley and Hult, 1998; Lumpkin and Dess, 1996; Rauch et al., 2009; Li and Liu, 2014). It encourages creativity and experimentation in product development and of firm processes (Baker and Sinkula, 2009; Li et al., 2010) so as to be able to respond to shifts in the market (Siguaw et al., 2006).

(2) Proactiveness

Proactiveness reflects the posture of seeking new opportunities and looking forward to market challenges (Ahuja and Lampert, 2001; Rauch et al., 2009; Gary et al., 2017). It refers to the tendency to:

- anticipate and act on future changes in the market and being the first to use and develop new methods, techniques, and products (Baker and Sinkula, 2009);
- use resources to pursue opportunities with uncertain outcomes (Ahuja and Lampert, 2001; Baker and Sinkula, 2009; Lumpkin and Dess, 1996); and
- undertake bold actions (Rauch et al., 2009). The importance of EO as a strategic resource is clear (cf., Gatignon and Xuereb, 1997; Ketchen et al., 2007).

(3) Risk taking

Kreiser, Marino, and Weaver (2002: p. 78) defines risk taking in business as the "willingness of entrepreneurs to engage in calculated business-related risks". McGrath

(2001) argues that entrepreneurs' growth is experienced because entrepreneurs take relatively high risks to help their businesses to increase their profit levels. When entrepreneurs take out loans and invest further capital into innovations, they take more risks, in form of loans, for prospects of increased success through innovativeness (Lumpkin and Dess, 2001; Wiklund and Shepherd, 2005). The tendency to take risks is assumed to be positively related to success (Frese, Brantjes and Hoorn, 2002; Lumpkin and Dess, 1996). The risk-taking dimension means that organisations are willing to put resources in areas whose productivity and returns are unknown and difficult to predict (Wiklund and Shepherd, 2005).

Nevertheless, its possession is not sufficient to deliver value (cf., Barney, 1991). As a resource, it is an input that needs to be deployed in order to be transformed into value offerings for the market and competitive advantage for the firm (e.g. Barney, 1991; Day and Wensley, 1988; Gupta et al., 2014). In this regard, organisational capabilities serve as the internal mechanisms through which a firm's resources are deployed in ways that match the firm's market environment (e.g. Teece et al., 1997).

Dynamic capabilities are the processes and mechanisms that enable the deployment, integration, coordination and reconfiguration of resources in order to successfully adjust to or even shape the unique characteristics of the marketplace (Eisenhardt and Martin, 2000; Teece et al., 1997; Yalcinkaya et al., 2007; Kurzhals., 2015). Dynamic capabilities include organisational learning mechanisms such as exploitation and exploration (e.g. Hsu and Wang, 2010; Yalcinkaya et al., 2007; Kurzhals, 2015).

Both exploitative and explorative capabilities entail a dynamic reconfiguration of the firm's current knowledge, resources and processes that allow it to address dynamic markets (Eisenhardt and Martin, 2000; Yalcinkaya et al., 2007) and influence its advantage and performance (e.g. Atuahene-Gima, 2005; Özsomer and Genctürk, 2003; Kurzhals, 2015).

Exploitation concerns refining what is already known, through knowledge deployment and generation that is closely related to the firm's existing knowledge bases and current organisational routines (March, 1991; Wang and Li, 2008; Lisboa et al., 2015). As such, it provides greater opportunities for new combinations and recombinations of existing knowledge, from which new insights may emerge (Atuahene, Gima and Murray, 2007). Exploration involves experimenting with new alternatives (March, 1991) and moving into new domains of activity and knowledge (Danneels, 2008; March, 1991). Subsequently, product development exploitative capabilities involve refining and extending existing product development skills, technologies and paradigms whereas product development explorative capabilities entail pursuing new product development skills, processes and knowledge (Atuahene-Gima, 2005; March, 1991; Yalcinkaya et al., 2007; Lisboa et al., 2015).
Technological and product development exploitative and explorative capabilities in particular have been gaining research attention (Atuahene-Gima, 2005; Özsomer and Gençtürk, 2003; Yalcinkaya et al., 2007; Lisboa et al., 2015).

This study examines the indirect influence of EO dimensions on firm performance in SMEs in Saudi Arabia. The following section presents the framework for that investigation. It draws together the main concepts of this thesis: EO dimensions; exploring capabilities; exploiting capabilities; reconfiguration capabilities; and performance. The framework indicates that EO dimensions are expected to contribute to the demonstration of firm performance. These concepts are then expected to have further implications for firm performance through exploring capabilities, exploiting capabilities, and reconfiguration capabilities. Below is a presentation of relationships between EO and DCs

### 2.4.2 The Influence of EO Dimensions on Exploring Capabilities, Exploiting Capabilities, and Reconfiguration Capabilities

Firstly, the EO refers to the unconventional decision-making styles, processes, and methods that guide a firm's activity (Lumpkin and Dess, 1996). It is a strategic orientation that comprises (1) innovativeness, (2) proactiveness, and (3) risk taking (Covin and Slevin, 1989; Hughes and Morgan, 2007; Wiklund and Shepherd, 2003; Arend, 2014).

#### 2.4.2.1 Innovativeness

Innovativeness reflects an environment that promotes experimentation and searching for new product-market opportunities (Lumpkin and Dess, 1996). Experimentation might include embracing new ideas, using new methods, and exploring (Barczak et al., 2009; Arend, 2014). Innovative firms are willing to experiment, develop creative thinking, and pursue technological leadership, thus departing from established practices and technologies (Barczak et al., 2009; Hughes and Morgan, 2007; Li et al., 2010). As such, these firms are likely to develop new technical solutions and products; they are likely to incur in explorative capabilities (Brockman and Morgan, 2003; Arend, 2014).

Innovativeness reflects a propensity to support new ideas, creative processes (Lumpkin and Dess, 1996), and R&D in the development of products (Hughes and Morgan, 2007), enabling firms to recognize and respond to changes in the market-place (Siguaw et al., 2006). Innovativeness thereby encourages both explorative and exploitative capabilities. It is a dimension of EO which involves both discovery and exploitative opportunities (Shane and Venkataraman, 2000; Arend, 2014). While exploitative capabilities may involve small changes, they can still result in the firm's evolution (Yalcinkaya et al., 2007), embodying an incremental type of innovation (Atuahene-Gima, 2005; Kusumawardhani, 2013). Hence,

innovativeness provides a means to modify existing products and reinforce a firm's position and relationships with current markets.

#### 2.4.2.2 Proactiveness

Proactiveness represents a forward-thinking perspective that motivates the firm to question established logics and assumptions about customers, competition, and the environment (e.g. Bateman and Grant, 1993). This may lead to the creation of new resource combinations that may require competencies that are not currently available in the firm (Atuahene-Gima and Ko, 2001; Kusumawardhani, 2013).

Proactiveness also refers to a posture of anticipating and acting on future market changes, namely customer needs and preferences (Kusumawardhani, 2013; Baker and Sinkula, 2009; Lumpkin and Dess, 1996; Gray et al., 2017). Nowadays markets are characterised by fast and intense market alterations (Menguc and Auh, 2010), more demanding customers and hyper-competition (Brown and Eisenhardt, 1998). Such conditions pressurise firms into being aware of and keeping up with the market. The adjustment or enhancement of existing products (Atuahene-Gima and Ko, 2001), as well as product line extensions, allow the firm to do so with relatively low costs and risk (Yli-Renko and Janakiraman, 2008; Gray et al., 2017).

#### 2.4.2.3 Risk-taking

Firms with a risk-taking posture are willing to devote resources to projects of a breakthrough nature (Wiklund and Shepherd, 2003) without a sure outcome. Such keenness to break away from the tried-and-true motivates these firms to venture into the unknown through explorative activities and solutions (Lumpkin and Dess, 1996). Their risk tolerance promotes an organisational climate conducive to incentivizing R&D as well as to implementing new types of technology and processes (Zhou et al., 2005; Kusumawardhani, 2013).

Risk-taking represents a willingness to commit resources to new projects with the pursuit of an opportunity (Lumpkin and Dess, 1996). It is usually associated with projects with unknown outcomes or high costs of failure (Wiklund and Shepherd, 2003; Lisboa et al., 2015). It also includes opportunity-seeking behaviour and constructive risk-taking (Hughes and Morgan, 2007; Lumpkin and Dess, 1996). It is also likely to affect exploitative activities, since projects of an exploitative nature provide the capital flow that firms need to survive in the short run and to invest in high risk and high capital consuming projects (Garcia et al., 2003; Yalcinkaya et al., 2007; Gray et al., 2017). Hence, a risk-taking posture can be seen as being conducive to the improvement and extension of a firm's existing products, with those future outcomes in mind. An entrepreneur and other important decision makers are boundedly rational and undertake choices designed to maximise goals, hence firms with greater integration skills are more inclined to leverage these skills as the positive feedback encourages further use. For instance, the call for research on the reconfiguring capabilities in SME emerging ventures, and in particular, the process where by these important capabilities are born and matured necessitated the writing of this research (Sapienza et al., 2006; Arend, 2014).

Hence, entrepreneurial capabilities in the new venture context are the capacities that entrepreneurs use to identify, amass, integrate and potentially reconfigure resources needed in the creation of new venture. Reconfiguring entrepreneurial capabilities could play a greater role in the creative process of SMEs. Woldesenbet et al. (2012) contend that entrepreneurial capabilities facilitate the small firm's entry into the mainstream market, and the dynamic capabilities thatenable evolution and growth in such market. Based on what is mentioned above, the following hypotheses have been established for EO:

Table 2:3:Hypotheses established for the model

***H1:*** Innovativeness positively influences explorative capabilities.

**H2:** Innovativeness is positively influenced by exploitative capabilities.

**H3:** Innovativeness positively influences reconfiguration capabilities.

**H4**: Proactiveness is a positive influence on explorative capabilities.

**H5:** Proactiveness positively influences exploitative capabilities.

**H6:** Proactiveness is positively influenced by reconfiguration capabilities.

**H7:** Risk taking positively influences explorative capabilities.

**H8:** Risk taking is positively influenced by exploitative capabilities.

**H9:** Risk taking is positively influenced by reconfiguration capabilities.

***H10:*** Exploration capability has a positive influence on performance.

***H11:*** Exploitation capability has a positive influence on performance.

***H12:*** Reconfiguration capability has a positive influence on performance.

### 2.4.3 The Influence of Exploring Capabilities, Exploiting Capabilities, Reconfiguration Capabilities on Firm Performance

#### 2.4.3.1 Exploration

Exploration entails a shift away from an organisation's current knowledge base and skills, and is directed at identifying new opportunities, technical skills, market expertise, and / or external relationships (Lavie and Rosenkopf, 2006; W. K. Smith and Tushman, 2005; Helfat andPeteraf., 2015), typically involving searching, risk-taking, discovery, experimentation,

prototyping, and flexibility (March, 1991). The focus of such activities is on the ability to reorient organisational competencies toward the identification of new opportunities as a source of competitive advantage (Shane and Venkataraman, 2000). The exploration of these opportunities involves reorienting strategies within the organisation to focus on discovering new means–ends relationships as opposed to pursuing optimisation within existing means–ends frameworks (Kirzner, 1997; Shane and Venkataraman, 2000).

Although exploration is characterised by high costs in the short term, it is vital to the long-term performance and survival of the firm. This is because the chances of success of new opportunities are uncertain and may involve a long gestation period before they pay off (Bierly and Daly, 2007). Thus, while exploration identifies new opportunities, it needs to be complemented with exploitation to leverage existing competencies and reap the rewards (March, 1991; Shane and Venkataraman, 2000; Kurzhals, 2015). There is evidence that entrepreneurial orientation has a positive association with business performance (Wiklund and Shepherd, 2003, 2005; Zahra and Covin, 1995). Similarly, some contributions have shown that exploration positively influences organisational performance (Baker and Sinkula, 1999; Tippins and Sohi, 2003).

#### 2.4.3.2 Exploitation

Exploitation is concerned with delivering expected outcomes within the organisation by using a firm's current core capabilities (March, 1991; Shane and Venkataraman, 2000). The issue for entrepreneurs here is to strengthen its core competencies and leverage them across related existing opportunity sets within the organisation (Shane and Venkataraman, 2000). Exploitation activities enable an organisation to benefit from the continuity provided by using known and successful strategies (Lamberg, Tikkanen, Nokelainen, and Suur-Inkeroinen, 2009; Kurzhals, 2015), which primarily result in short-term gains (Benner and Tushman, 2002). Activities relating to exploitation often include or have the goal(s) of improving quality and

efficiency, and fostering existing knowledge, skills, technologies and capabilities in the organisation (Benner and Tushman, 2002; Lavie, Stettner, and Tushman, 2010; Lisboa et al., 2015).

Exploitation alone, however, is not sufficient for long-term survival; without the pursuit or willingness to explore new opportunities, survival is not assured as external environments change while the organisation remains static (Lavie et al., 2010; March, 1991). A firm may achieve a competitive advantage by building up its innovative capabilities and resources crucial to addressing changes in the external environment by updating its already available capabilities (Teece et al., 1997). It is therefore important to balance exploitation activities with exploration activities.

#### 2.4.3.3 Reconfiguration

It can be argued that reconfiguration capabilities are themselves innovative capabilities that can be used to address changes required in a dynamic environment in order to achieve competitive advantage. Hence, reconfiguration is an appropriate mechanism that can mediate the effect of entrepreneurial orientation used in this study on firm performance. Secondly, a firm employs reconfiguration capabilities to become familiar with and to take action concerning opportunities and threats by extending, modifying, changing and creating its ordinary capabilities to achieve first order change (Winter, 2003). Here, entrepreneurial components can be regarded as some of the ordinary capabilities whose effect on performance is mediated by reconfiguring capabilities through modification, change and recreation in order to improve the performance of the firm.

Reconfiguration capabilities can positively affect firm performance by allowing it to identify and respond to opportunities through developing new processes, products and services (Chimielewski, 2007). They may also quicken the tempo, improve the effectiveness, and

enhance the competence with which a firm functions and acts in response to changes in its environment. This positively influences a firm's performance by enabling it to take advantage of revenue attractive opportunities and to regulate its operational cost (Tallon, 2008). Reconfiguration capabilities can develop the contribution made by ordinary capabilities by extending already available resource configuration in ways that result in a completely new set of decision alternatives (Eisenhardt and Martin, 2000; Gary et al., 2017).

### 2.4.4 The Influence of EO Dimensions on Firm Performance

Firm performance has been shown to be positively influenced by the construct of EO (Covin and Slevin, 1986; Becherer and Maurer, 1997; Wiklund, 1999; Gary et al., 2017; Vishal et al., 2014). This means that firms that actively apply EO adapt more readily to changes in complex market environments and are able to pro-actively shape the market environment, thereby promoting their growth and enhancing their performance potential. For comprehensive literature reviews see Covin and Wales (2012) and Rauch et al. (2009).

The three EO dimensions of innovativeness, proactiveness and risk-taking are now considered.

#### 2.4.4.1 Innovativeness

Schumpeter (1942) was among the first to emphasise the importance of innovations, and innovativeness in particular. Innovativeness is described as the engagement of creative and experimental behaviours that result in new products or services and technical leadership based on research and development efforts (Rauch et al., 2009). It is through innovativeness that established practices are revolutionised and new ideas encouraged (Grande, Madsen and Borch, 2011; Hansen et al., 2011; Lumpkin and Dess, 2001), and new ventures created by taking resources from existing companies (Lumpkin and Dess, 1996). The process of creative destruction is first set in motion by the entrepreneur, making innovation within the concept of EO an essential success factor (Lumpkin and Dess, 1996). According to the results of previous

EO-studies, innovativeness and business performance strongly correlate (Rauch et al., 2009). With regard to dynamic environments, such as in the Rhine Valley, Kreiser and Davis (2010) suggest that a high level of innovativeness promotes a firm's performance.

#### 2.4.4.2 Proactiveness

Proactiveness refers to the ability to foresee problems, desires and changes. It is characterised by initiatives that are taken in order to exploit unforeseen opportunities, and the subsequent introduction of new products and services ahead of competitors (Rauch et al., 2009). Alternatively, a proactive enterprise can be the initiator of activities, which competitors then need to react to. This means that a proactive company opens new paths in terms of products or services (Grande et al., 2011). Indeed, proactiveness reflects the importance of initiatives in the entrepreneurial process through which competitive advantage can be generated, which means that firms can influence and create their environment by actively observing environmental pressures (Grande et al., 2011; Lumpkin and Dess, 1996). In addition, taking the initiative, for instance, by creating or co-creating rising markets, is regarded as a crucial factor in entrepreneurship (Lumpkin and Dess, 1996). This highlights proactiveness as a fundamental EO dimension. Finally, Kreiser and Davis (2010) ascribe high levels of proactiveness to superior business performance in munificent and dynamic environments.

#### 2.4.4.3 Risk-taking

Risk-taking is based on the circumstance that uncertainty is, to some extent, accompanied by entrepreneurial actions (Lumpkin and Dess, 1996; Low and MacMillan, 1988). Risks result when a substantial resources are invested in a project with uncertain outcomes or a potentially high risk of failure (Grande et al., 2011; Hansen et al., 2011; Madsen, 2007). In fact, the willingness to take the risk of ventures into the unknown is a significant trait of an entrepreneur (Wiklund and Shepherd, 2003). However, risk-taking in terms of entrepreneurial behaviour

refers to assessable and controlled risk endeavours, rather than to actions that comprise extreme and uncontrolled risk (Morris, Kuratko and Covin, 2008). According to Frank, Lueger and Korunka (2007), risk propensity leads to learning effects, which increases the entrepreneur's ability and willingness to handle risky situations. Furthermore, risk-taking is regarded as a valuable trait in dynamic environments that promotes a firm's standing and, concomitantly, the performance (Kreiser and Davis, 2010). This leads to the formulation of the following hypotheses.

## 2.5 The Research Hypotheses (the Research Model)

This study adopts the research model (see figure 3.1). It aims to analyse previous studies which tested the relationship between the components of EO (INN, PRO, and RSK) and firm performance through DCs (EXP, EXT, REC).

This section expands on the research hypothesis by exploring how the findings relate to existing literature through the twelve direct relationships and three mediation relationships. These relationships are discussed as per the illustration in Figure 3.1 and structural model in Table 2.4.

Table 2:4:Structural Model

| Relationships |
|---|
| **INN ⟶ EXP** |
| **INN ⟶ EXT** |
| **INN ⟶ REC** |
| **PRO ⟶ EXP** |
| **PRO ⟶ EXT** |
| **PRO ⟶ REC** |
| **RSK ⟶ EXP** |
| **RSK ⟶ EXT** |
| **RSK ⟶ REC** |

**EXP ⟶ PER**

**EXT ⟶ PER**

**REC ⟶ PER**

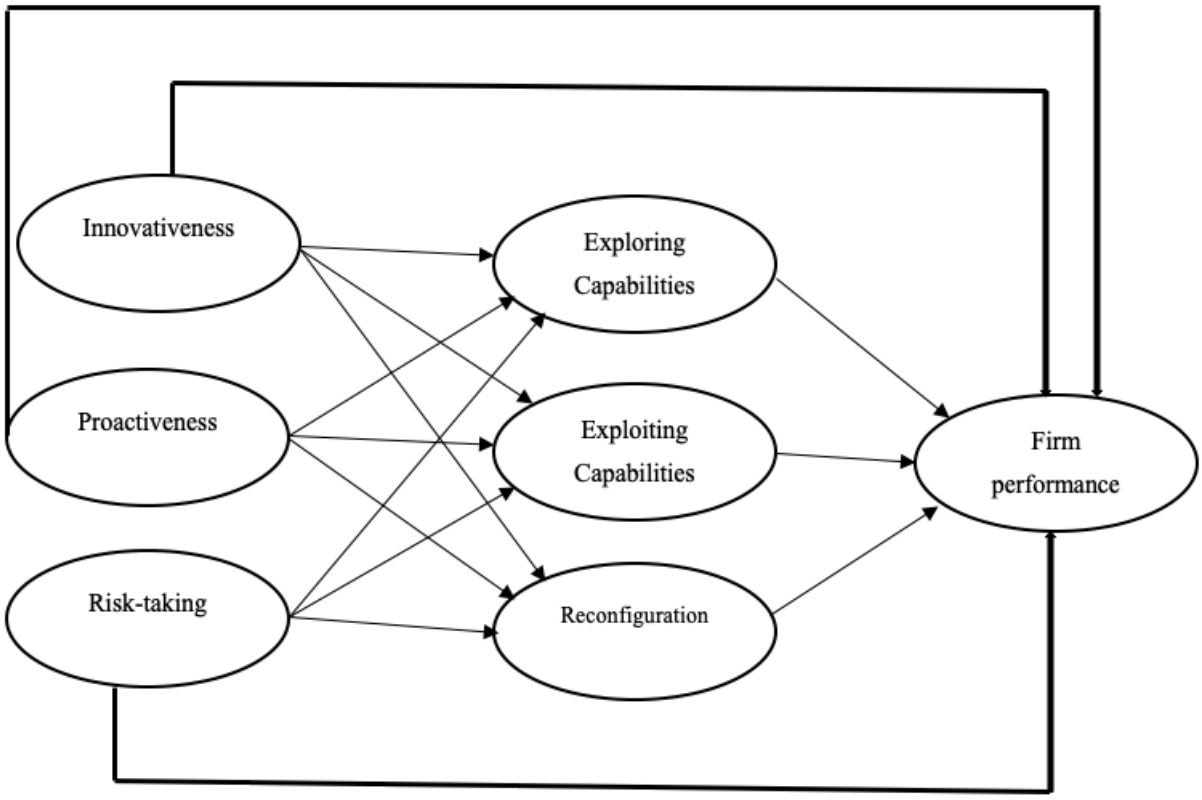


Figure 2-1: Proposed Research Framework

### 2.5.1 The relationship between innovativeness and explorative capabilities

The research proposes there to be a positive relationship between innovativeness and the explorative capabilities of organisations. Innovativeness gives firms the ability to develop new knowledge for production and processes thereby making them more explorative with innovations, which leads to differences in growth of firms.

Akcigit and Kerr (2013) argue that smaller firms have higher degree of explorative innovativeness because their ratio of research and development expenditure to-sales exceeds that of larger firms. Smaller firms tend to have higher levels of major innovations compared to

larger firms, and, in fact, have the highest employment growth levels with many radical innovations (Braunerhjelm and Ding, 2016).

The smaller firms, or those that have resources and capacity to engage in exploration, amplify the positive relationship between innovativeness and explorative processes as they develop new knowledge as a part of their day-to-day work. This positive relationship is also affected by the firm's ability to risk short term profitability and growth by investing in explorative innovation, which is vital for long-term sustainability and performance of a firm (Hagedoorn and Duysters, 2002; Nooteboom, 2000). Corradini et al. (2016) concluded that firms that engage in explorative innovativeness ought to compare their immediate and long-term decisions with those adopting this approach and also with the ones that do not expect to change innovation strategies in the short-term. Small firms and those interested in entrepreneurial processes will have a positive relationship between innovativeness and exploration since they comparatively accrue many advantages in exploration.

Innovativeness gives firms opportunities to develop new knowledge for production and processes, thereby making them more explorative, with explorative innovations leading to differences in growth of firms depending on their sizes.

The findings on the impact of SMEs innovativeness on a firm's exploration capabilities are positive and significant. This is in alignment with Yalcinkaya et al. (2007) which is that innovation and exploration capabilities are related positively, while Rothaermel and Deeds (2004) argue that exploration is central in innovativeness processes. Brockman and Morgan (2003) found that firms that innovate more are likely to expend more on explorative capabilities. Such a relationship entails dynamic flexibility in the manner in which customer needs are met, with a focus on innovativeness through incremental changes and efficiency improvements (Kirca, Jayachandran, and Bearden, 2005; Zhou, Brown, and Dev, 2009).

According to Atuahene-Gima, Slater, and Olson (2005), innovation is related to exploration in the desire to fulfil customer needs, which leads to introduction of new products and services. Wu and Shanley (2009) argue that an innovative environment needs an adequate level of exploration, and their results provide significant evidence of the relationship between innovation and exploration. Arend (2014) found that firms which are likely to innovate more technical solutions and products are inclined to incur expenditure on explorative capabilities.

This positive relationship between innovativeness and exploration is hence not spread throughout all firms. Some larger firms have a negative relationship because they opt to exploit other than explore innovativeness, thereby reducing their ability to create and develop new products and processes, which hinders them from becoming sustainable in the long-term (Akcigit and Kerr, 2013). Therefore, it is hypothesized that:

***H1:*** *innovativeness has a positive impact on exploration capability.*

### 2.5.2 The relationship between innovativeness and exploitation capabilities.

The extant research as discussed in the literature review, argues that there is a relationship between innovativeness and the exploitative nature of organisations. The firm's innovation is regarded as an antecedent of exploration and exploitation (Koryak et al., 2018). As a long-term strategy, the relationship between innovativeness and exploitation can be argued to be dependent on a wide variety of factors such as the size of the firm; the economic climate; the nature of the organisation's products and processes; and both the short and long-term strategies of the firm. Exploitation, as a learning process to widen an organisation's knowledge base (Rowley, Behrens and Krackhardt, 2000), is widely used as a means of bringing about changes in products, services and processes by increasing their efficiency and as a manifestation of their willingness and ability to experiment with new options (Covin and Slevin, 1989; Miller,1983).

Unlike SMEs, which benefit more from explorative innovations, larger firms benefit more from exploitative innovations (Akcigit and Kerr, 2013). Larger firms tend to concentrate their innovativeness on exploiting existing knowledge to increase their innovativeness rather than by investing heavily in innovative research and development approaches. For example, innovativeness in marketing entry entails exploiting market-related capabilities to enter new markets and launch new products using existing understanding to develop new knowledge about the markets, products and processes (Lisboa, Skarmeas and Lages, 2011). Similarly, innovativeness towards products and market differentiation and effectiveness have been found to have a positive relationship with innovation, in that firms with high innovativeness tend to have a higher propensity to launch new products and processes through exploitation of existing knowledge. Stevenson and Jarillo (1990) argue that innovativeness helps in creation of new ideas, decision making and entry into new markets since firms are able to develop and implement new orientations through innovativeness.

This thesis builds on the resource-based view of the firm, which depicts firm as bundle of resources. The accumulation of innovation inside an SME enhances the firm's ability to exploit opportunities. Innovation may lead to the creation of new resources that may require competencies that are not currently available in the firm (Atuahene-Gima and Ko, 2001; Kusumawardhani, 2013). Innovative firms are willing to experiment and to develop creative thinking (Barczak et al., 2009; Hughes and Morgan, 2007). Innovativeness reflects a propensity to support R and D in the development of products (Hughes and Morgan, 2007) which means innovativeness encourages exploitation activities, even though they still result in the firm’s evolution (Yalcinkaya et al., 2007).

This impact of innovativeness on exploitation is also limited to smaller and newer firms as many have a limited knowledge base to tap into markets, unlike larger firms. These larger firms can tap into exploitative capabilities to enhance their innovativeness in product development,

and market entry and growth thereby strengthening the firm's innovativeness and exploitation (Yalcinkaya et al., 2007). Atuahene-Gima (2005) noted that innovativeness and exploitation can be observed to deal with small improvements in existing products or technologies leading to product differentiation which helps reinforce a firm in its existing market. Therefore, it is hypothesized that:

***H2:*** *There is a positive relationship between innovativeness and exploitation capability.*

### 2.5.3 The relationship between innovativeness and reconfiguration capability.

The literature review identified that innovativeness positively impacts the reconfigurative nature of organisations, which is in line with dynamic capabilities theory (Girod and Whittington, 2016). In dynamic environments, firms tend to be highly innovative, constantly changing their products and processes, which demonstrates a positive relationship between the two variables (Arend and Bromiley, 2009). García-Sánchez, García-Morales and Martín-Rojas (2018) noted that organisations that are innovative tend to be aware of the need to adapt to changing external environments and thus put in place systems that facilitate continuous internal changes (reconfiguration). This is echoed by Jones, Lanctot and Teegen (2001) who argue that technological changes that entail innovative production and processes can interact in a superior manner with dynamic management and are thus able to keep pace with the changing operational demands to sustain positive organisational performance.

Innovative firms have high and dynamic technological capabilities (Zahra and George, 2002) and succeed by exploiting other organisational assets which lead to changes in their operations, traditions and strategies (Giarratana and Torrisi, 2010). Innovation has also been found to have a positive relationship with reconfiguration capabilities in that such organisations need to learn and change continuously as they adopt new technologies for them to survive and thrive. Innovativeness gives firms the technological capacity to absorb knowledge and new ways of

doing things by absorbing the innovative approaches by organisations so as to keep their operations relevant within the changing environment (Burnard and Bhamra, 2011). Cabrera-Suárez, Saá-Pérez and García-Almeida (2001) reiterate that innovative firms use their newly developed knowledge and technologies to shape their future in terms of organisational processes, patterns and operations. Innovativeness has a positive correlation with reconfiguration in that they are both facets that entail the ability of firms to prepare for future challenges (Slater, Hult, and Olson, 2010). Gloet and Samson (2016) stated that innovativeness is imbedded in all structures systems and strategies of organisations thereby making reconfiguration as dynamic as the extent to which such organisations innovate.

Danneels (2002) argued that it is crucial for the dynamic perspective to have RBV, in order to understand how firms evolve over time, by using their resources, and because firms must continuously renew and reconfigure themselves if they are to grow (Zahra et al., 2006). Entrepreneurially oriented firms stimulate opportunities through their actions and innovation, and to best utilize such opportunities, firms have to reconfigure their assets. Innovativeness encourages experimentation in product development (Baker and Sinkula, 2009; Li et al., 2010). To be able to respond to shifts in the market (Siguaw et al., 2006) and in order to develop new products, reconfiguration capability allows the firm to reconfigure resources, including ordinary capabilities (Eisenhardt and Martin, 2000). Ahrend, (2014) argued that innovation and applying DCs have a direct relationship. He also indicated that being more innovative leverages dynamic capabilities. Innovativeness is a resource that strengthens dynamic capability. Blyler and Coff (2003) argue that innovation contributes fully to dynamic capability development and deployment. Ambrosini and Bowman (2009) argued that innovation permits the renewal and reconfiguration of a firm's resources. Kachouie, Mavondo, and Sands (2018) indicated in their research that there is a significant positive effect of value innovation on operational marketing capabilities. By engaging in value innovation activities, organisations create new value for

customers in innovative and non-traditional ways. To benefit from new forms of customer value, organisations need to develop new ways to deliver this value to customers. Therefore, it is hypothesised that:

***H3:***. Innovativeness positively influences reconfiguration capabilities

### 2.5.4 The relationship between proactiveness and explorative capability.

The literature review identified that there is a positive impact of proactiveness on the explorative nature of organisations. Proactiveness entails actions by the firm to retain or expand its market and profitability, and has been found to have a positive relationship with the explorative nature of a firm. Lumpkin and Dess (1996) noted that proactive firms act through explorative processes to develop and introduce diverse or new processes, products and technologies. The proactiveness of a firm means that it is willing and able to invest in explorative opportunities, with factors such as employee job autonomy, and moderating effects such as the dynamism of the environment enhancing explorative innovativeness. In such organisations, firms and their staff are proactive to dynamic environment in absorbing new and existing knowledge to make the firms stable and able to improve their performance (Eisenhardt and Martin, 2000). Proactive firms tap into the accumulated knowledge and experience that exists within the organisation through effective absorption and use. The dynamic operational environments within which firms operate require them to be proactive in adopting knowledge and exploiting existing opportunities (Grimaldi, Quinto and Rippa, 2013). Proactive firms actively strengthen their potential to absorb knowledge and technology at all levels by exploring new ways and approaches to do things. Organisations that deepen their understanding of technological and environmental demands, and actively work towards keeping such knowledge and understanding relevant are able to adapt best (Ambrosini, Bowman and Collier, 2009; Kor and Mesko, 2013).

Burnard and Bhamra (2011) state that firms which search for collaborative knowledge, learning and communication processes are supported by their proactive ability and willingness to be explorative. Proactive organisations require resilience and continuous adaptation, which relates to explorative capabilities, instead of waiting to be forced to change by inevitable environmental demands (Hamel and Valikangas, 2003). Proactive organisations tend to be innovative and explorative as a prerequisite to success, and they seek and adopt information and technology to support their operations. García-Sánchez, García-Morales and Martín-Rojas (2018) reiterate that proactive firms scan the internal and external environment for ideas, innovations and knowledge which stimulate organisational explorative capabilities.

Proactivity was found to increase the firm's potential to support its existing capabilities by increasing the intensity of its activities (Martin and Javalgi, 2016). Zhou (2007) carried out research into 'young' firms in China and observed the importance of the three dimensions of entrepreneurial proclivity: innovativeness, risk-seeking and proactive behaviour. He concluded that proactiveness is especially influential, followed by innovativeness in investigating exploring internationalisation activity or exploiting it (Cavusgil and Knight, 2015). Arend (2014), observed that a way to improve firm performance is to build higher-quality DCs and then leverage them by gathering more resources in an entrepreneurially-oriented manner by being more proactive and aggressive. Zahra and George (2002) and Liao et al., (2003) also concluded that there is a positive relationship between proactiveness and explorative capabilities, because proactive firms can actively identify and absorb knowledge. Therefore, it is hypothesised that:

***H4:*** Proactiveness has a positive influence on explorative capabilities.

### 2.5.5 The relationship between Proactiveness and exploitation capability.

The literature review found there to be a somewhat mixed relationship between proactiveness and the explorative nature of organisations. Based on the literature review, there might be relationship between proactiveness and the exploitative nature of a firm. As noted in hypothesis 5, a firm's decision to be proactive and act ahead of competition (Lumpkin and Dess, 1996) is mainly related to their ability and willingness to be explorative rather than exploitative. However, an organisation's exploitative processes are dependent on both proactive and reactive responses to the dynamic environment in which they operate (Smith and Cao, 2007). This neutral effect is best explained by the definitions used by Yu et al (2015) who argued that since exploitation means small changes in existing products and processes of organisations, there is increased inertia in exploitative firms. As in hypothesis H4, proactive firms are more explorative and innovative, hence the positive relationship between proactiveness and explorative capabilities. On the other hand, exploitative firms have limited scope within which to exploit internal knowledge (Rosenkopf and Nerkar, 2001). The boundaries of such organisations determine the extent to which knowledge can be exploited and adopted (Stuart and Podolny, 1996) irrespective of how proactive or otherwise such firms may be. The proactiveness of firms that are exploitative in nature are hence limited by their internal knowledge and boundaries, which creates a neutral effect on their overall performance. Proactiveness also has a neutral effect on exploitation as it brings about only minor changes, in the form of improvements, which is seen to enhance inertia and continuity of organisations' status and performance.

Proactiveness also has a neutral relationship with exploitation, in that firms that focus on exploitation, which enables them to increase their stability in their day-to-day operations, have increased internal efficiency (Rosenkopf and Nerkar, 2001; Stuart and Podolny, 1996). Firms that pursue an exploitation agenda, despite increasing their prospects of dealing with the environment, are not often required to be proactive as is the case with exploration. Exploitative

firms tend to refine their existing knowledge, unlike explorative firms which seek proactively to increase their adaptability and respond to environmental uncertainties. The anticipation of firms to act on future market changes in relation to their ability to use their exploitative capabilities has been found to be neutral, in that such proactive or reactive approaches are responded to by firms through innovation and exploration. Mezias and Lant (1994) noted that explorative capabilities reduce changes and discovery in organisations, because they enhance their status. He and Wong (2004) see proactiveness as being of no consequence to firms that opt for exploitative activities, as this leads to inertia and reduced opportunities to discover new processes by focusing on knowledge led activities. Therefore, it is hypothesised that:

***H5:*** Proactiveness positively influences exploitative capabilities

### 2.5.6 The relationship between proactiveness and reconfiguration capability.

The literature review indicated the positive impact of proactiveness on reconfiguration capability. Girod and Whittington's (2016) findings concur with those of this research in that organisations that are proactive and those that go through reconfiguration at the same time tend to perform better. Organisations that embrace both proactiveness and reconfiguration tend to restructure and respond to changes and thereby are able to perform better (Gaba and Joseph, 2013). This can be through multiple forms of reconfiguration that take place as organisations become proactive in their operations. Proactiveness gives organisations an ability to increase their managerial and operational capacity and competitiveness, thereby leading to restructuring and reconstruction.

Proactiveness has also been found to have a positive impact on reconfigurations as firms that adopt this approach increase their performance by leveraging existing knowledge and refining it so as to enhance performance (Dothan and Lavie, 2016). Similarly, a positive impact has also been identified in proactiveness that entails exploitative reconfiguration where firms invest in

existing knowledge to enable them to improve their performance in both scope and size (Katila and Ahuja, 2002). Smith and Tushman (2005) also argued that a positive relationship exists between the proactiveness of firms and reconfiguration as organisations transfer or share their knowledge across various units and locations, hence improving their products and processes.

Karim and Kaul (2015) found that there is a positive relationship between proactiveness and reconfiguration in that firms that seek knowledge outside the organisation also tend to bring in new products and processes. This improves the organisation's ability to create value and improves its performance through the proactive processes of innovation and adaptation to the dynamic business environment. However, this exploratory reconfiguration is only positive to proactiveness so long as the firm does not feel that it is taking risks that would harm its productivity and sustainability (Hoopes and Postrel, 1999). As such, when firms feel that reconfiguration entails a risk-taking process, many of them will prefer to remain within the known territories of processes and products, which is supported by findings in hypothesis 6. Nevertheless, where organisations feel that they are performing below expectations, they are willing to take risks to bring in new knowledge for processes and products (Greve, 2003).

Kachouie, Mavondo, and Sands, (2018) indicate that proactive market orientation (MO) makes a significant positive impact on marketing capabilities. A superior proactive MO provides organisations with knowledge about the evolution of their industry sector. By implementing this knowledge, organisations discover potential opportunities and discover deficiencies in existing capabilities, thereby enabling them to better reconfigure their capabilities. Therefore, it is hypothesised that:

***H6:*** Proactiveness is positively influenced by reconfiguration capabilities.

### 2.5.7 The relationship between risk taking and exploration capability.

Risk taking is also likely to affect exploration capability. Risk-taking leads organisations to be less conservative as they seek to explore new options and opportunities by increasing their product and processes options (Gunasekaran et al., 2004). Moreover, risk-taking firms tend to be more explorative as they take on new technologies, products and enter new markets which require them to explore new options and opportunities (Lechner and Gudmundsson, 2014). Rezaei (2018) found that if production performance is the focus of a firm, risk-taking has an impact on the explorative nature of their operations as one of their major roles is to endeavour to increase production processes. He and Wong (2004) concluded that risk taking is positively related to both the explorative and exploitative characteristics of firms in that by taking risks, such firms exploit their knowledge and explore new innovations to attain superior performance. Risk taking through active organisational actions to exploit existing knowledge is common in firms seeking to disrupt existing competitive conditions in an industry. Innovation, which positively supports exploitation has also been found to have a positive impact on risk taking because such firms allocate resources to ventures whose outcomes are uncertain to develop new products and processes (Wiklund and Shepherd, 2003). Organisations take risks by allocating resources and knowledge to what they perceive to be possible future trends, enabling them to develop new products and processes (Atuahene-Gima and Ko, 2001; Bhuian, Menguc and Bell, 2005).

By taking risks, businesses are able to experiment with new technology and be creative, and thereby develop new opportunities and outperform their competition (Atuahene-Gima and Ko, 2001). Lumpkin and Dess (1996) qualify this by suggesting that only constructive risk-taking has a positive relationship with exploration because this leads to improved performance and not to increased threats to the business. Such risk-taking ventures lead to commercially successful new products and technologies. Explorative firms have been classified as innovative forward-thinking firms as they are always on the lookout for opportunities and technological

improvements that disrupt the industry, an attribute that is highly associated with risk-taking behaviours (Lisboa, Skarmeas and Saridakis, 2016).

Lisboa et al. (2011) argued that EO supports the firm's engagement in explorative products and market expansion. Their argument concluded that EO supports firms to engage in explorative products and market expansion. Taking the above into consideration, the study suggests that firms face uncertainty and risks, and use different capabilities to enhance performance (Martin and Javalgi, 2016). Accordingly, this study proposes a link between risk-taking as a dimension of EO and exploration, as a part of dynamic capabilities, to determine how EO impacts these capabilities. Therefore, it is hypothesised that:

***H7:*** Risk taking positively influences explorative capabilities.

### 2.5.8 The relationship between risk taking and exploitation capability.

Nadkarni and Narayanan (2007) support these relations in their assertions that a firm's taking risks often leads to knowledge exploitation and adaptation in its endeavour to fit into the dynamic environment. It is imperative that firms can keep up with environmental changes, albeit with slow changes internally through reconfiguration and externally through innovation and exploration. Risk-taking also makes firms adopt new knowledge and become innovative by being more flexible. Where definitions of the exploitative capabilities of firms are extended, it is to include knowledge that comes from outside the firm, risk-taking organisations increase their value through exploitation (Jimenez, Garcia and Molina, 2011). Similarly, firms with the capacity to acquire and assimilate knowledge also have similar interests and abilities to be exploitative.

Firms that take risks when increasing their use of knowledge, through its acquisition and sharing, are better able to adopt exploitative capabilities as such knowledge which widens their knowledge sharing and development at all levels in the firm (Liao, 2003; Yung-Choi, Lee and

Yoo, 2010). According to March (1991) risk taking is an active decision by firms to try new exploitative actions to improve products and processes, hence making risk taking a fundamental part of businesses' dynamic and adaptive nature. Organisations whose management allows staff to take risks in shaping how the business operates develop a culture of exploitative learning at all levels (Atuahene-Gima and Ko, 2001) which strengthens the internal conditions of a firm, increasing further exploitative tendencies (March, 1991). High risk taking which involves in investment in innovativeness and proactiveness leads to increased learning and knowledge development, thereby facilitating high product-development exploitation. Moreover, high product-development exploitative capabilities need high risk-taking ventures that combine to create increased firm performance (Lisboa, Skarmeas and Saridakis, 2016). Firms that are open and accept risk-taking have a positive relationship with exploitative processes as they adopt and exploit new ideas and knowledge to develop new processes and products. Risk-taking firms also invest in renewing their existing knowledge and skills of their products and processes, and devote resources in refining and extending their knowledge routines and bases (Lisboa, Skarmeas and Saridakis, 2016).

Arago´n-Correa and Sharma (2003) argue that risk taking, in terms of resource handling, is related to exploiting and developing new products and services, while Zahra and Garvis (2000) argue that developing and exploiting capabilities requires risk taking. Entrepreneurial activities impact the selection of resources, skills and learning processes to exploit external knowledge (Zahra, Sapienza, and Davidsson, 2006). A firm's risk taking is related to exploiting actions that are not conservative, like borrowing heavily or committing significant resources to ventures in dynamic environments (Martin and Javalgi, 2016). Lisboa et al., 2011argued that EO includes the firm engaging in uncertain activities like R&D, managerial processes and solutions, which imply the relationship from risky action to exploitation. Based on the previous

argument, risk taking might have a direct impact on a firm's exploiting capabilities, and this research suggests investigating such relationship. Therefore, it is hypothesised that:

***H8:*** Risk taking is positively influenced by exploitative capabilities.

### 2.5.9 The relationship between risk taking and reconfiguration capability.

A firm's failure to perform according to their expectations leads them to take risks in order to overcome their incapacity and failures (Audia and Greve, 2006). This entails resource reconfiguration which has been found to be linked to poor performance (Baum et al., 2005) in the organisation's endeavour to reach its expected performance level. Given that reconfiguration entails decisions concerned with the shifting of resources to create a combination of resources that will improve performance, this process is affected by risk-taking activities (Shinkle, 2012). Risk taking firms engage in extensive exploitative and exploration processes leading to huge changes in organisations, unlike reconfiguration which is less disruptive and slower in nature. Though in such cases risk taking leads to huge changes in organisations, small changes continue to happen irrespective of the big changes. Low risk-taking firms also have little effect on the dynamic nature of a firm's trajectory and strategy through small long-term changes to sustain the business operations and performance. Lisboa, Skarmeas and Saridakis (2016) concluded that even low risk-taking which involves neither putting risky investments into exploitation or exploration has been found to lead to reconfiguration, thereby enabling firms to attain a high level of product development. It can be concluded that risk taking may hence have neither a positive nor a negative impact on reconfiguration. This is because the influence, positive or negative, of risk-taking on reconfiguration is dependent on other factors such as innovativeness and proactiveness plus other antecedent conditions of the firm (Eisenhardt and Martin, 2000; Teece, 2007). It is argued that dynamic capability as a routine allows the firm to repeatedly practise certain capabilities,

for example, reconfiguration, which reduces its risk. This idea suggests that there could be no impact of firm risk taking on its exercise of dynamic capabilities, since by carrying out a routine it becomes more confident with these capabilities (Zahra, Sapienza, and Davidsson, 2006). Therefore, it is hypothesised that:

***H9:*** Risk taking positively influences reconfiguration capabilities.

### 2.5.10 The relationship between exploration capability and performance.

The huge significance of the relationship between the explorative capabilities of firms and their performance has been reported as a common phenomenon (Gibson and Birkinshaw, 2004; Yang, Lang and Li, 2010). This relationship has, however, been found to be complex, with Gibson and Birkinshaw (2004) arguing that both exploration and exploitation capabilities and choices go hand in hand. This leads to ambidexterity, with firms that are able to successfully invest in both being able to improve their performance. Exploration focused on the "search for new possibilities through experimentation and discovery to increase variance and innovation of primarily new activities" (Hughes, Sørensen and Hughes, 2016: p2). As such, firms increase their performance when they successfully explore new ways to boost their income and reduce their costs (Junni et al., 2013). Exploration helps organisations to protect themselves against inertia by developing and adopting new knowledge, thereby developing new products and processes necessary for long-term organisational performance (Hagedoorn and Duysters, 2002; Yang, Lang and Li, 2010). Wang, Chiu and Chen (2015) noted that exploration helps firms to develop new opportunities. Research on strategic performance have also shown a positive relationship between firms that have high capacity in absorbing knowledge into their operations and performance (Beer et al., 2005; Crossan and Bedrow, 2003; De Geus, 1999).

This relationship has been found to be highly significant as a firm's explorative capacity enables them to assimilate knowledge and information into its operations, which is crucial for

its continued competitiveness and adaptation to the dynamic business environment (Cohen and Levinthal, 1994; Lane et al., 2006). Those firms that have accumulated knowledge and those that are able to use it, in conjunction with external knowledge, perform far better than others. Knowledge acquisition and absorption in organisations has a close relationship with performance, in that it increases their performance consistently (Liao et al., 2003) by making them able to adapt better to their environment (Jansen et al., 2005). Therefore, it is hypothesised that:

***H10:*** Exploration capability has a positive influence on performance.

### 2.5.11 The relationship between exploitation capability and performance.

Exploitation is increased improvements in "efficiency, cost recovery, variance reduction, and better execution of largely existing activities" (Hughes, Sørensen and Hughes, 2016: p2). This increases the performance of the firms, exploiting existing knowledge to make the firm more efficient, and productive with less waste and reduced losses (Hagedoorn and Duysters, 2002). Good performance of organisations invests highly in exploitation capabilities and has been identified as a common phenomenon in industries (Venkatraman, Lee and Iyer, 2007). Organisations that are able to accomplish these exploitative statuses have superior competition abilities (Stettner and Lavie, 2014) with the incapable ones becoming unsustainable (March, 1991). Exploitation is especially important because it helps new ideas and innovative approaches to be exploited, thereby allowing firms to increase their income and opportunities both short and long-term . The sustainability of firms and their long-term optimal performance can only be achieved by firms that are able to exploit their resources effectively and consistently (Hughes, Sørensen and Hughes, 2016; Lubatkin et al., 2006; Raisch et al., 2009). Since exploitation entails firms deviating from their existing knowledge, products, services and technologies, it creates risks for the firm but also establishes opportunities for growth when

exploitation is successful (Braunerhjelm and Ding, 2016). Wang, Chiu and Chen (2015) noted that exploitation enables firms to refine their current capabilities, thereby increasing their performance with less investment compared with exploration options.

Though exploitation increases the efficiency and performance of firms, it has been found to reduce a firm's capacity to discover new processes, services and products by depending on existing knowledge to grow (Michl, Gold and Picot, 2013). It has also been found to lock organisations into circumstances that hinder long-term growth by being unable to adapt to changing circumstances. Other researchers have also found that market-related exploitative capabilities lead to improvement in the performance of a firm by leveraging the firm's market presence and facilitating adaptation of the firm to the present markets (Özsomer and Genctürk, 2003; Uotila et al., 2009). This ensures increased performance through the positive and sustainable returns of the firm (Lee, Lee and Lee, 2003). To summarize, engaged actively in acquiring knowledge from outside the organisation, using different methods to internalize it, and then disseminate it. This combination of knowledge acquisition, internalization and dissemination thus are the enabling routines for the organisation to exploit existing knowledge from outside the organisation to improve performance. Therefore, it is hypothesised that:

***H11:*** *exploitation capability has a positive influence on performance.*

### 2.5.12 the relationship between reconfiguration capability and performance.

Sirmon et al., (2007) noted that reconfiguration entails the exploitation of existing knowledge to leverage an organisation's resources to enhance its performance. The improved performance is hence not driven by the organisation's ability to reconfigure itself but by its existing knowledge, which it can use in its exploitation process or its knowledge which it can adopt through innovation and exploration processes. Reconfigurations, in terms of innovativeness, proactiveness and risk taking, have also been found to have a neutral effect on performance in

that these reconfigurations are adopted where firms experience deficit in growth as they seek to reposition themselves in the market (Park, 2007) processes (Chen and Miller, 2007), position in the sector (Schimmer and Brauer, 2012) and innovation (Yayavaram and Chen, 2015). However, these reconfigurations have been found to happen where organisations fail to meet their targeted performance. Since reconfiguration is a process of continuous reorganisation which is often limited, there is little change, which, compared to the costs and the disruption it causes, leads to insignificant changes in performance (Teece, 2007). The performance response to reconfiguration, though positive in short term, tends to be negative in the long-term due to disruption that leads to indirect costs (Karim and Mitchell, 2004), thereby neutralising the effects of the impact.

Girod and Whittington (2016) found different results on performance: restructurings tending to have a positive impact, while reconfiguration tended to have a negative one. Eisenhardt and Martin (2000) argue that DCs are substitutable, that is, if DCs are not sensitive and adapted to the current specific context of the firm, the reconfiguration of firm's capabilities may not help creating valuable resources. To sum up, research on DCs concluded that DCs may not directly impact performance and may not happen automatically (Pezeshkan, Fainshmidt, Nair, Frazier, and Markowski, 2016).

However, these findings contradict other research which concludes that the relationship between reconfiguration and performance is either positive or negative. For example, Helfat and Raubitschek (2000) and Smith et al. (2005) argue that reconfiguration which is in the form of continued strategic organisation-wide changes increases performance over time. Others also argue that reconfiguration is the most consistent attribute in all organisations and most change slowly over time, thereby sustaining themselves through positive performance (Flier et al., 2003; Volberda and Lewin, 2003). Therefore, it is hypothesised that:

***H12:*** *Reconfiguration capability has a positive influence on performance.*

### 2.5.13 The mediating effect of exploration capability in the EO - Performance Relationship

Exploration, as a mediating factor in the relationship between innovativeness, proactiveness, risk taking and performance, can best be explained in terms of its role in enabling a firm to grow its income and sustainability. As exploration entails businesses looking at different ways of accomplishing their aims and objectives and determining when to implement such decisions, exploitation is often a longer-term determinant and affects all aspects of business adaptive processes (March, 2003). As proposed in hypothesis H10, exploration entails the search for innovative and proactive ways to make the firm perform better by taking active actions and not simply reacting to the environment (Lumpkin and Dess, 1996), while exploring the extent to which it may take risks so as to enhance performance. Firms thus adopt exploration as a vital factor in determining which variations, experimentations, operations and innovations to adopt or not to adopt so as to perform well (March, 1991). Wang (2008) and Rauch et al., (2009) purport that organisational performance is affected by exploration as a mediating variable in that it creates other conditions within which organisations are proactive in their innovation and risk-taking processes.

Firms that are proactive shape their environment and increase their performance by being explorative, hence innovative and risk-taking, through the development of new technologies and approaches (Lumpkin and Dess, 1996; Venkatraman, 1989). As noted in exploration significance, firms that have ambidexterity, by investing in both exploitation and exploration show improved performance (He and Wong 2004; Tushman and O' Reilly, 1996). Exploration, which is driven by learning and knowledge in organisations, strengthens the organisational performance of a firm by enabling it to be active in its risk taking and exploitation processes, which in turn improves its performance (Baker and Sinkula, 1999; Hult, Hurley and Knight, 1999; Yuni, 2015; Zahra, Ireland and Hitt, 2000). Rezaei (2018) concludes that the

performance of a firm, to some extent, is determined by exploration as a mediating factor, as it is influenced by proactiveness, innovativeness and risk-taking as dimensions of the organisation's overall performance.

***H13-a**: Innovativeness improves a firm's performance by enhancing its exploration capability.*

***H13-b**: Proactiveness improves a firm's performance by enhancing its exploration capability.*

***H13-c**: Reconfiguration improves a firm's performance by enhancing its exploration capability.*

### 2.5.14 The Mediating Effect of exploitation capability in the EO - Performance Relationship

Researchers have concluded that the positive performance of a firm is related to its proactiveness, innovativeness and propensity for risk-taking which are mediated by its knowledge and learning orientation which in turn determines its exploitation capacity (Hakala, 2011; Liu, Luo and Shi, 2002; Ma'atoofi and Tajeddini 2010). Yuni (2015) reiterates that a firm's innovativeness, risk taking and proactiveness lead to increased performance due to the ability to share ideas and exploit existing knowledge. March (2003) argues that returns from exploitation are recouped sooner and are more certain, thereby making an organisation's decisions to invest in exploitation of existing innovative ideas and to be proactive in launching new products and / or services as a risk factor. This is because risk-taking, innovative and proactive organisations require some form of knowledge and learning to be able to take risks, innovate new products and take an active role in responding to their environments instead of waiting for the environment to dictate how they act (Hakaka, 2011; Ma'atoofi and Tajeddini 2010; Wang, 2008; Yuni, 2015). Firms engage in endeavours to improve sales, profits,

products, markets and customer satisfaction with exploitation acting as a mediating factor with their short-term returns helping to finance both long-term investments and their revenue and other current costs (Stettner and Lavie, 2014). The firm is able to determine its short-term earnings through how often it proceeds with exploiting its existing innovations, ideas and taking risks. This defines the proactiveness of the firm and its long-term productivity.

As noted in hypothesis H11, exploitation entails adopting innovative approaches and being proactive in business operations, which entails taking risks so as to increase the production and efficiency of the firm and the implementation and execution of new and more suitable approaches (March, 1991; Venkatraman, Lee and Iyer, 2007). The viability of sufficient exploitation is the use of what is already known and available to the firm to give it sustainable growth and is driven by the firm's willingness to switch to new approaches using what they have already developed or knowledge gained but yet to be used in productivity. He and Wong (2004) conclude that exploitation is a mediating factor in the ability of the businesses to adopt innovative and proactive approaches, and produce models with organisations showing significant growth when they exploit new approaches. Venkatraman (1989) reiterates that proactive firms tend to not only be innovative and risk-taking but also take an active role in exploiting their knowledge and resources to improve their performance and competence. Based on the findings of previous studies discussed above, this hypothesis is established as follows:

***H14-a**: Innovativeness improves a firm's performance by enhancing its exploitation capability.*

***H14-b**: Proactiveness improves a firm's performance by enhancing its exploitation capability.*

***H14-c**: Reconfiguration improves a firm's performance by enhancing its exploitation capability.*

### 2.5.15 The Mediating Effect of reconfiguration capability in the EO - Performance Relationship

Rezaei (2018) argues that the performance of a firm is influenced by mediating factors such as reconfiguration, which in turn influence other performance determinants such as innovativeness, proactiveness and risk-taking. Firms are involved in several things at the same time with reconfiguration their structures where this reconfiguring leading to multiple changes such as innovativeness, proactiveness, increased / decreased performance (Bowman and Sigh, 1993). Karim and Kaul (2015) reiterate that reconfiguration is a mediating factor in that it causes firms to develop, acquire and implement new ideas while combining existing and new knowledge in multiple ways so as to improve their performance. Dothan and Lavie (2016) argue that resource reconfiguration enables organisations to adapt better, with reconfiguration acting as an indirect mediating factor in organisational performance by encouraging proactiveness, risk taking and new ways of doing things aimed at improving performance. Reconfiguration, as a process by which organisations change and adapt to changing environments, means that organisations reconfigure their processes and approaches to innovativeness and proactiveness in order to improve their performance (Capron and Mitchell, 2012; Karim and Capron, 2015).

On the other hand, reconfiguration also acts as a mediator in that the use of innovativeness to develop new products and processes is driven by the proactiveness of firms, which means increased costs (Karim and Mitchell, 2004). Such increments impact on performance because a risk-taking firm increases their costs, thereby impacting negatively on its performance (Brown and Eisenhardt, 1998; Miller and Friesen, 1982). Reconfiguration also acts as a mediator or moderator for innovativeness and proactiveness in that the continuous changes create a dynamic environment in which organisations continually innovate and have to be proactive in order to sustain their innovative strategy. Despite these findings, Rezaei (2018)

concludes that because the literature shows conflicting findings, there is need for further research to determine whether the relationship between the performance of a firm and its reconfiguration as a mediating factor and other variables needs further analysis. Based on the findings of previous studies discussed above, the final hypothesis is established as follows:

***H15-a**: Innovativeness improves a firm's performance by enhancing its reconfiguration capability.*

***H15-b**: Proactiveness improves a firm's performance by enhancing its reconfiguration capability.*

***H15-c**: Reconfiguration improves a firm's performance by enhancing its capability.*

To sum up, the positive indirect effect of EO dimensions on firm performance has been widely acknowledged in the entrepreneurship literature; this has led to abundant research on the relationship between these two constructs. On the other hand, other studies were unable to identify a positive and significant relationship between EO dimensions and firm performance due to various reasons. The indirect influence of EO on firm performance through Exploring Capabilities, Exploiting Capabilities, and Reconfiguration Capabilities have been discussed. The causal relationships among this study's constructs have been conceptualised. This study tests hypotheses regarding the causal effects between the variables.

Finally, and based on what is mentioned above, this study comes to bridge and fill the gaps in the previous studies. In other words, it was undertaken to address the various limitations that have been identified by previous research and to counter the lack of data and information on EO in Saudi Arabia (Pistrui and Fahed-Sreih, 2010; Kayed and Hassan, 2011; Ali and Al Ali, 2012; Ahmad, 2012; Khan et al., 2013; Salem, 2014; Abed et al, 2015; Mutahar, Rasli &amp,2015; Al-Ghazali, 2015; Horschig, 2016; Yusuf & Albanawi, 2016; Cassol, Gonçalo, &amp,2015; Ruas, 2016; Kantur, 2016; Ali, Suny Ali, 2017; Abed and Zhang, 2018). To begin with, the various research studies on EO and performance have tended to show varied results

even when studies have a similar population of firms at a similar time-line thereby requiring further research to determine this relationship (Kollmann & Stoeckmann, 2014; Kraus et al., 2012; Lechner & Gudmundsson, 2014; Wang & Yen, 2012). Secondly, EO is a construct which has not been widely studied in some developing countries including Saudi Arabia, and so this research seeks to investigate the ecosystem in which EO exists in Saudi Arabia and what its influencers and variables are (Chen and Hsu 2013; Sahasranamam & Raman, 2018). Thirdly, understanding the relationship between EO and performance is plagued by problems arising from the environmental turbulence within which a firm operates (Pratono & Mahmood, 2016; Zellweger & Sieger, 2012).

Moreoever, different researchers investigate different geographic and time periods, while others utilise different variables to determine the relationship between EO and performance of a firm. Some examples are Pratono & Mahmood (2015) who use market reward philosophy or Morgan et al., (2009) who use marketing capability variables to determine this relationship. Such approaches make it difficult to effectively report on EO and its impact on organisational performance, and hinder the prospects of effective comparison in countries where limited studies on this subject have been carried out, such as in Saudi Arabia. This limitation, coupled with the need to explore the mediating effects of variables such as exploration, exploitation and reconfiguration capabilities that affect EO and performance, led to the need to carry out this research.

This research was also carried out to develop a better understanding of the SMEs sector in Saudi Arabia. The desire of the government and business people in the country to diversify the economy and develop successful SMEs (SAMA, 2013) demands that there is need for high quality knowledge and understanding of business operations and their determinants. By investigating these unexplored areas of EO and the relationship between specific variables and performance among SMEs in Saudi Arabia, this study lays the foundation for further studies,

either directly or through comparative processes. This study thus sheds light on EO in Saudi Arabia, especially within the performance of SMEs

## 2.6 Summary

This chapter generally reviewed literature related to EO as one of the salient concepts within strategic management and entrepreneurship. It presented recent developments in EO, which was introduced for the first time by Miller (1983). Each of the EO dimensions: innovativeness, risk-taking, and proactiveness was also explained. The chapter also presented arguments about the nature of EO dimensions. The positive effect of EO on firm performance has been widely acknowledged in entrepreneurship literature; this has led to abundant research on the relationship between these two constructs. This chapter discussed several dimensions to measure firm performance that have been applied in past research.

Also, the chapter presented the links between DCs and firm performance, highlighting dynamic capabilities dimensions (exploration, exploitation and reconfirmation). Furthermore, the RBV theory was presented to highlight the relationships. Finally, it is worth noting that the above discussion suggests that resources and capabilities play distinct roles in firm performance. In addition, the chapter aims to propose the conceptual frameworks to be tested in this study. In this regard and based on the review of the previous empirical studies, the research model illustrates the role of EO in enhancing a firm's performance. Using the RBV and DCs was suggested. Broadly speaking, the model attempts to explain how EO (INN, PRO and RSK) affect a firm's performance. The study uses data collected from the private sector from Saudi Arabia. The following chapter provides an overview of the Saudi context.

# 3 CHAPTER THREE: Research Methodology

## 3.1 Introduction

Research methodology explains the research assumptions adopted by the researcher during the entire research process. The methodology serves as the foundation upon which the entire research study is built. In order to choose the appropriate methodology and methods for conducting the research, the study needs to be positioned within an appropriate research

paradigm and a methodology that is compatible with the research paradigm selected (Saunders et al. 2012).

This chapter introduces the research philosophy, research approach, and research methods of this study. It presents in detail the ideas behind quantitative methods, questionnaire surveys, and deals with the issues concerning the sample frame, sample size, and sampling techniques. Structural equation modelling, the procedure used for the quantitative analysis, is presented. Finally, a discussion of the validity and reliability of the tool are also included.

## 3.2 Research Questions

The research questions, set out below, are considered as a means of understanding the relationships between EO and firm performance through DCs in SMEs of Saudi Arabia. The following research questions have been formulated:

- **RQ 1**: To what extent do the EO dimensions of innovativeness, proactiveness and risk-taking affect exploitative, explorative, reconfiguration capabilities?
- **RQ2**: To what extent do the DC dimensions of exploration, exploitation, and reconfiguration affect a firm's performance?
- **RQ 3**: How strongly do DC's exploitative, explorative, and reconfiguration capabilities mediate the relationship between EO and firm performance?

Generally, the methodology adopted in research determines the processes that are applied to address the research questions and achieve its objectives. It is worth noting that methodology means the accurate link between theory and research methods. Theory establishes the paradigmatic lens through which the researcher sees the world and requires the researcher to define both ontological and epistemological positions, in other words, "what there is to be known" and "how what is to be known can be known". These positions help to inform the process by which the researcher defines a particular social theoretical approach and the set of

research methods adopted (Guba and Lincoln, 1994). In addition, Howell (2013) suggested that methodology affects research methods and has a considerable impact on the outcomes of the investigation.

### 3.3 Research philosophy

While discussing the ontological and the epistemological paradigms of this research, it is essential to develop a philosophical stance for ensuring the quality of this research. Research philosophy requires a researcher's understanding in relation to the appropriateness of a research design to untangle the research problems. Scholars claim that the advantage of understanding research philosophy is to minimise the errors in the methodological context research (Hughes and Sharrock, 1997). Research methodology can be defined as a scientific procedure of investigating reality (Healy and Perry, 2000).

The selection of an appropriate research philosophy is embedded in epistemological and ontological paradigms (Burrell and Morgan, 1979). In moving the discussion to the research design and research methods that are used in this research, it is pivotal to point out the potential of the research paradigms selected. To better understand the research paradigms, researchers adopt ontological and epistemological paradigms of research philosophy to design a research framework that better describes the worldview (Silverman, 2013). Kuhn (2012) claims that scientific research follows a well-structured model by which researchers can provide solutions to research problems. Hence, to represent research philosophy, researchers use both ontological and epistemological paradigms to provide a conceptual model of social reality. The underlying dimension of research philosophy reflects the nature of knowledge.

While the ontological paradigm of a research study demonstrates the nature of knowledge and reality, the epistemological view of a study reflects the standard available method of analysing the nature of knowledge and reality (Bryman and Bell, 2015). Epistemology helps the

researcher to select an appropriate methodology, which directs the selection of a research method by analysing research questions and developing a research design. The present study considered both positivism and interpretivism in order to identify the research philosophy appropriate for this research. Research philosophy can be thought of as the ethos according to which all the data collection, analysis and interpretation on the research topic is framed. It is more than just a general approach, tactics and methods. The two research philosophies which are considered in this thesis are firstly, the positivist approach, which sits within the Western "scientific tradition" and secondly the interpretivist approach (also known as anti-positivist) (Schadewitz and Jachna 2007).

According to Bashir et al. (2008), positivism belongs to a tradition of theoretical investigation, especially associated with Enlightenment thinking, rational thought, and the belief that reality is concrete and stable. An observer can describe the phenomenon under investigation objectively without the act of observation influencing that phenomenon. Advocates of this approach believe that phenomena under investigation need to be isolated, and all observations made should be repeatable and flexible, that is, findings may be replicable. Research that uses this approach typically involves dealing with and manipulating a single independent variable in order to identify patterns in, and discover relations among some of the components that comprise the social world. According to this approach, researchers are able to make predictions based on facts that have been observed and explained previously, and how those facts overlap and interact (Englander, 2012).

Positivism has certain requirements regarding observable truth and reality. This might entail the belief that certain aspects are incapable of being measured according to the positivist paradigm, and these, therefore, remained unresearched (Schadewitz and Jachna 2007). The main criticism against the use of positivism, and thus the quantitative approach in project management research is that it is based on the "Human Law of Causality" (i.e. linear thinking)

when the discipline is in fact open-ended and requires lateral thinking (Smyth and Morris, 2007). Equally, a major criticism against social constructivism, advocacy/participatory and thus the qualitative approach (which leans towards lateral thinking) is that the researcher is an integral part of the research itself. The question of "reliability" and repeatability is then raised see for instance, Oppenheim, 1992.

Interpretivists assert that reality can only be fully realized and understood through the personal interpretation of the researcher. That is, it is fundamental to the interpretivist paradigm that it is not possible for investigators to avoid influencing the phenomena they study. Scientists acknowledge that various explanations and interpretations of reality are possible but claim that these explanations are inherent in the scientific knowledge that they are seeking to achieve (Englander, 2012).

While positivism has become entrenched in many aspects of project management research, in practice positivism and interpretivism are not mutually exclusive, with many researchers using and placing differing emphasises on various elements of both approaches (i.e. by taking advantage of the strengths of each). The research phenomenon under consideration and the key research questions influence the choice of paradigm or philosophy be adopted (Pollack, 2007; Remenyi and Williams, 1998). The conceptual model is pivotal in deciding which paradigm to follow (Miles and Huberman, 1994), and forces the researcher to be rational and systematic about the constructs and variables to be included in the research instrument.

This research investigates the indirect effect of EO dimensions on firm performance using the exploring, exploiting, and reconfiguration capabilities by defining a series of research hypotheses that can be empirically tested. Thus, notwithstanding any potential limitations of quantitative logic in estimating behavioural measures, there is reasonable evidence to suggest that it has over the years stood the test of time and might therefore be appropriate for this

research. Therefore, and also for the purposes of establishing methodological validity for the type of research being undertaken, a positivist philosophy was adopted. In summary, it is appropriate that this research follows a generally positivist philosophy, using quantitative data collection, and deductive methods. The next section looks in greater detail at the research approach taken in this study, building on the research philosophy set out in this section.

In short, the above sections explained that the nature of the positivist paradigm is driven by quantitative data that suits the exploration of hypotheses. Thus, the positivist paradigm perfectly matches the exploration of the hypothesis and research problems. In this study, the researcher emphasises the positivist paradigm, where deductive inquiry is conducted by applying a quantitative research design to examine and demonstrate answers to the research questions. In a deductive approach, the mode of research enquiry is testing the theory the researcher has adopted by applying a survey or experimental method.. In addition, when research problems attempted to reveal the relationship between facts, the positivist paradigm, applying the deductive inquiry technique, is considered to be the most suitable . In the logic of the positivist view, it is clear that researchers use quantitative methods for measuring constructs and analysing the hypotheses of causal linkages. In social science, quantitative research methods follow a sequential process to conduct the research in a highly systematic way. On the basis of the above discussions, the research design and research method of this study is based on a positivist philosophical paradigm. Consequently, the subsequent section describes the application of a research design and research method to this present study.

Research philosophy simply refers to the use of argument in seeking reality and knowledge (Saunders and Lewis, 2012). Clarification by Howell (2013) of the difference between reality and knowledge shows that reality can be separate from, or a construction of, the mind, while knowledge relates to the understanding and interpreting of facts emanating from data. There are various reasons why an understanding of philosophical research positions is vital. Firstly,

it can help the researcher to identify the research design and methods, which are used in a particular study, and to determine the overall research strategy that is employed. This includes the type of collected data and data source. Secondly, knowledge of the research philosophy underpins and helps the evaluation of different methodologies and methods and facilitates the selection of the proper methods for a study (Easterby-Smith, Thorpe, and Lowe, 2008). Therefore, the research philosophy can influence the quality of the research (Neuman, 2014).

This following table includes a brief comparison of research philosophies with respect to ontology, epistemology, and methodology.

Table 3.1 Paradigms of Inquiry

| *Item* | *Positivism* | *Post-positivism* | *Critical theory* | *Constructivist and Participatory* |
|---|---|---|---|---|
| **ONTOLOGY**<br>*The form of reality. What can be known about reality* | Reality can be totally understood. Reality exists and it can be discovered. (Naïve realism) | Reality may only be understood imperfectly and probabilistically. Reality exists but humanity is unable to totally understand it. (Critical Realism) | Reality shaped by history. Formed by values that are crystallised over time. (Historical Realism) Breakdown of a clear distinction ontology and epistemology. | The reality is locally constructed. Based on experience although shared by many. Dependent on person/group changeable Participatory: co-created through the mind and the world. |
| **EPISTEMOLOGY**<br>*The relationship between the investigator and what can be discovered.* | The investigator and the investigation are totally separate. Values are overcome through the scientific procedure. Truth is a possibility | Abandonment of total separation of the investigator and investigation. Objectivity still pursued. | The investigator and the investigated linked. Accepted that historical values influence the inquiry. Results subjectivity. | As critical theory. However, the findings are created as the investigation proceeds. Participatory: Paradigm findings are developed between the researcher and cosmos. |
| **METHODOLOGY**<br>*How does the investigator go about finding out what he/she believed can be discovered.* | Scientific experiments based on hypothesis, they are usually quantitative. Conditions that confound are manipulated. | Multiple modified scientific experiments. Pursues falsification of hypothesis; may include qualitative methods. | Needs dialogue between the investigator and the subject of investigation. Structures may be changeable. Actions effect change. | Creates a consensus through individual constructions including the construction of the investigator. Participatory: similar methodologies can be employed (Primary action research) |

(Source: Howell, 2013 p. 29, Lincoln and Guba, 2000 and Heron and Heason, 1997)

### 3.4 Research approach

This section describes the key issues associated with deductive and inductive approaches. The reasons for choosing the deductive approach are then set out.

Deductive approaches test theories or hypotheses. In this type of research, the researcher gathers data and then formulates hypotheses that can then be examined or tested quantitatively (Schadewitz and Jachna, 2007). The process of applying a deductive research approach traditionally includes an investigation of a clearly determined and well-formulated problem. This depends on examining theories and making a shift from the theoretical to an empirical statistical examination.

Inductive research starts with the development of an empirical investigation, which is conducted using an interpretivist approach so that a corresponding theory can be developed (Creswell 2003). Unlike the deductive approach, the inductive approach aims to conclude with a theory. An emerging theory is developed systematically using the data collected. Inductive approaches are often associated with qualitative research and are characterised by processes in which data is collected by the researcher who then uses data analysis to develop a theory (ibid.). However, with the use of a qualitative study, there is the possibility of using various methods, ranging from controlled experiments or examining official statistics to survey data, although some of these may in fact not be appropriate for certain social sciences investigations (Adams and Cox 2008). On the other hand, when an in-depth, multi-perspective enquiry into a social or human issue is required, an inductive approach is usually used to provide the results.

The inductive and deductive approaches have many differences from one another, and one of the most important of these for researchers concerns how to combine extant literature and theory to structure any inquiry using these approaches (Phellas et al.,

2011). Table 3-1 below offers a detailed view of the deductive and inductive approaches and provides a starting point for comparisons between the two (Schadewitz and Jachna 2007).

As mentioned in conceptual framework chapter, this study considered the impact of EO context (INN, PRO and RSK) on performance through DCs. According to RBV, the EO work as resources that increase organisational performance. The study tests the applicability of RBV and DCs, and therefore, adopts a deductive approach. The rationale behind this approach is to bring to the EO literature some theoretical foundations.

In this deductive approach the researcher is seeking to examine the causal relationships between the research variables using quantitative tools for data collection (in this case, a questionnaire survey).

Table 3:1: Research Approaches, Source: Schadewitz and Jachna (2007)

| Deductive | Inductive |
|---|---|
| **Scientific principles** | Gaining an understanding of the meanings that humans attach to events |
| **Moving from theory to data** | A close understanding of the research context |
| **The collection of quantitative data** | The collection of qualitative data |
| **The need to explain causal relationships between variables** | A more flexible structure to permit changes as the research progresses |
| **The application of controls to ensure validity of data** | A realisation that the researcher is part of the research process |
| **The operationalisation of concepts to ensure validity of data** | Less concern with the need to generalise |

### 3.5 Research Design

Yin (2003: 19) defines research design as "the logic that links the data to be collected (and the conclusions to be drawn) to the initial questions of study". The research design reflects the overall plan regarding the way of answering the research question (Saunders et al., 2009). It covers clear aims, resulting from the research question, determines the sources used to collect data, and delineates the limitations that are inevitably faced. For instance, access, time, location and cost, in addition to covering ethical matters (Saunders et al., 2011). As a starting point, the research purpose must be identified so as to find a suitable research strategy to answer the research question.

The general aim of selecting a proper research design is to conduct an empirical investigation in such a way that answers the research questions (De Vaus, 2001). In particular, research design is treated as a dominant plan that describes the procedures in examining the accumulated information. The selection of a proper research design and research method pertain to the variation of standpoints on research philosophy. In order to select an appropriate research design, the ontological and epistemological assumptions must be considered by the researcher. For instance, a research design that uses a quantitative method is based on a positivist philosophical standpoint. At this point, it is crucial to differentiate the terminologies of research design and research method. Research design acts as a framework that reflects the action plan of any research (Creswell and Clark, 2007), whereas a research method follows a single process through which the researcher chooses the data collection steps and a data analysis mechanism (Creswell et al., 2008). In essence, a researcher should select an

appropriate research design based on the research questions and the characteristics of the research problems.

Many research designs are available, each of which is appropriate to a particular set of objectives, such as correlational, descriptive, experimental and meta-analytic designs. This study adopts an explanatory research design to understand the causal effects among the constructs of the conceptual model by using quantitative research methods.

On the basis of the research design, this study specifies a suitable research method for collecting and scrutinising the data in the subsequent section.

The following section describes the justification for using quantitative research methods in this study. Thereafter, a detailed explanation of the data collection process is provided, along with a short section which describes the tools that are used in this study to support the analysis of the data.

### 3.6 Quantitative Research Methods

The philosophical stance of this research emphasises a deductive approach that follows a "top down" process where confirmation of the research comes from a theoretical background (Saunders et al., 2011). In favour of the deductive research approach to validate the theory, it has been shown that quantitative research methods are deemed proper practice in the premise of natural science and social science. Quantitative research is classified in terms of deduction, validation, testing the hypotheses, data collection in a standard way from a large sample, and conducting relevant statistical analysis (Johnson et al., 2007). This study uses a deductive research approach so the researcher can confirm hypotheses through the generalisation of the collected data by statistical analysis. The quantitative research method (Johnson and Onwuegbuzie, 2004) was selected because it allows the researcher to check the validity of existing

theories. It also gives the study the needed validity to measure the hypotheses and it requires less time to analyse the data compared to a qualitative data interpretation process. A researcher can carefully balance the progress of research by satisfying reliability and validity concepts by following the method of quantitative data analysis (Bryman and Bell, 2015). Furthermore, past study suggested that a researcher should adopt quantitative research methods for answering 'what' type of questions (Robson, 1993). As the aims of this study are to answer three crucial 'what' forms of questions, it is important to use quantitative methods to examine the hypotheses. Following this method, a researcher can measure the degree of research bias, and examine the multivariate causal relationships among different constructs. This implies that the researcher can measure the impact of exogenous variables on endogenous variables by using quantitative research methods. Davidson (2004) claims that when researchers are observing the causal relationships of various constructs, it is imperative for a researcher to apply suitable statistical techniques to support quantitative analysis.

In management literature, researchers widely use quantitative methods to understand and validate the formation process of new constructs that scholars are proposing (Mitrega et al., 2012). By applying quantitative research methods this study can confirm the validity of indirec entrepreneurship orientation dimensions on firm performance.

### 3.7 Research Strategy

Research strategies are employed to identify the sources of data, collection methods, and the research limitations such as money, time, and location. These strategies help researchers to obtain data that can answer the research questions or address the research

objectives. There are many types of research strategies which include experiments, surveys, and case studies (Saunders et al., 2011), which are discussed below.

### 3.7.1 Experiment

Experimental research is an empirical quantitative research method, which is used to test a research hypothesis. It follows the positivist paradigm by seeking knowledge through objective and systematic methods (Miller and Tsang, 2011). In this method, the researcher tests the independent variable or the experimental group by manipulating them according to some special programme or condition (Kothari, 2004). The purpose of an experiment is then to discover either cause-and-effect or explanatory variables which must be defined and measured (Saunders et al., 2011).

### 3.7.2 Survey

Surveys are usually employed to answer the questions such as who, what, how much and how many (Saunders et al., 2011). This strategy is more likely to apply in descriptive and explanatory research and it is linked mainly to the deductive approach (Gray, 2009). Normally quantitative data are collected through questionnaires or structured interviews and are used to explain the relationships between the research variables by the use of statistical analysis (Saunders et al., 2011).

### 3.7.3 Case Study

A case study is "an empirical inquiry that investigates a contemporary phenomenon within its real-life context; when the boundaries between phenomenon and context are not clearly evident; and in which multiple sources of evidence are used" (Yin, 2003). Case studies are often employed in in-depth qualitative research which aims to collect data or to observe a social unit, for example, a person, a family, a cultural group, an

organisation, or a whole community. Also, it fully examines a limited number of events or conditions and their interrelationships. Therefore, the case study method is fundamentally an intensive analysis of a particular unit under specific considerations (Kothari, 2004) and offers a deeper understanding of a complex topic.

### 3.7.4 Surveys as the chosen research strategy

The present study aims to examine the relationship between the EO and firm performance. As discussed above, surveys are usually employed to answer the questions of what, how much and how many. In addition, this strategy is more associated with the deductive approach and enables data to be collected quantitatively. Furthermore, the data collected from the survey strategy can be used to suggest a possible explanation of the relationship between the study's variables. Consequently, the survey is the most relevant strategy to the research philosophy, deductive approach and quantitative method of this study.

## 3.8 Questionnaire survey

The inferential survey, or questionnaire, is a quantitative method much used in business research (Easterby-Smith et al., 2015), which is mainly used for descriptive and explanatory studies. Descriptive studies tend to use the questionnaire to obtain opinions and determine organisational practices or to identify issues pertaining to this organisation (Saunders et al., 2012). Explanatory studies use surveys to collect data which the researcher can use to test and explain the relationship between variables (Saunders et al., 2012).

### 3.8.1 Questionnaire Design

The empirical part of this research is based on a survey aimed at addressing the study's specific research questions. The design of the questionnaire is now considered, firstly in general terms and then the specific elements are discussed.

Surveys are conducted for the purposes of description, exploration or explanation. Good survey research is quantitative, self-monitoring, contemporary, replicable, systematic, impartial, representative, and theory-based (Burton, 2007). The data are collected from individuals who are selected in a statistically valid way from a population and statistical techniques are then employed to make some statement about the total population.

Practical issues associated with surveys include accessibility of the total population to be enumerated and obtaining their cooperation; ensuring the target respondent is the actual respondent; obtaining a representative sample and an acceptable response rate; and setting appropriate questions. Further, there may also be bias from respondents who give socially desirable rather than accurate answers, and from the researcher who sets questions which reflect the researcher's expectation of the answers (O'Leary, 2004).

The questionnaire, which was developed in both English and Arabic, followed Churchill and Iacobuccci's (2001) steps which are designed to ensure that aspects such as questionnaire length, style of question and scoring are properly taken into account. The design process took into account the requirement for internal validity and reliability of data collected; the rate of response; structure; and the robustness of the pilot study (Saunders et al., 2012).

In this research, web-based questionnaires were employed. Emails were sent to owners / managers of SMEs in Saudi Arabia, which contained the link for the questionnaire along with the covering letter text. The survey contained a cover letter that clearly and

briefly explained the purpose of the study; a statement assuring full anonymity and confidentiality of respondents (Bryman, 2003; Saunders et al., 2012); and the motivations and implications of the study (Bryman, 2003). The cover letter of this study's questionnaire is shown in appendix (1).

The respondents were identified using profile information based on category questions design. The current study has implemented the same categories for all questions, a Likert-scale where respondents are asked to present their agreement on each statement starting from 1 "strongly agree" to 5 "strongly disagree". The Likert scale provides greater reliability than using the categorical system (Madu, 2003). Dawes (2008) conducted a study where 5-point, 7-point and 10-points were compared, which shows that none of the three formats is less desirable from the perspective of obtaining data for regression analysis. Hence, a five-point scale was used throughout the whole questionnaire in order to provide simplicity and consistency.

### 3.8.2 Questionnaire layout

Saunders et al. (2012) emphasised the point that when designing the survey, it is important to use clear academic wording, provide simple instructions on how to select answers, and avoid jargon or abbreviations; offensive or embarrassing words that may result in biased responses; asking two questions in one (loaded questions); using words that have different meanings or can be misunderstood; and leading questions to ensure obtaining unbiased responses.

The questionnaire was divided into eight sections:

1. Descriptive statistics (Gender, Education level, Company sector and Age)
2. Innovativeness
3. Proactiveness

4. Risk Taking
5. Explorative capabilities
6. Exploitative capabilities
7. Reconfiguration capabilities
8. Firm performance.

Sections 2 to 8 were also divided into sub sections as shown in in table 3.2 below.

Table 3:2: Items Measurements

| Constructs | Statements | References |
|---|---|---|
| **Innovativeness** | • A strong emphasis on R&D, technological leadership and innovation<br>• Very many new lines of products or services<br>• Changes in product or service lines have usually been quite dramatic | Green, Covin, and Slevin, 2008 . Engelen et al. 2014 |
| ***Proactiveness*** | • Typically initiates actions to which competitors then respond<br>• Is very often the first business to introduce new products/services, administrative techniques, operating technologies, etc.<br>• Typically adopts a very competitive, "undo-the-competitors" posture | Green, Covin, and Slevin, 2008. Engelen et al., 2014 |
| ***Risk Taking*** | • In general, they have a strong proclivity for high-risk projects (with chances of very high returns)<br>• In general, we believe that owing to the nature of the environment, bold, wide-ranging acts are necessary to achieve the firm's objectives<br>• Typically adopts a bold, aggressive posture in order to maximise the probability of exploiting potential opportunities | Green, Covin, and Slevin, 2008. Engelen et al. 2014 |
| ***Explorative capabilities*** | • Acquired manufacturing technology and skills entirely new to the firm | (Atuahene-Gima, 2005; Danneels, 2008; Yalcinkaya et al., 2007) |

| | | |
|---|---|---|
| | • Learned product development skills and processes (e.g. product design, prototyping new products, timing of new product introductions, customizing products for local markets) entirely new to the industry<br><br>• Acquired entirely new managerial and organisational skills that are important for innovation (e.g. forecasting technological and customer trends, identifying emerging markets and technologies, marketing, manufacturing and other functions, managing product development process)<br><br>• Strengthened innovation skills in areas where it had no prior experience<br><br>• Learned new skills in areas such as funding new technology, staffing R&D function, training and development of R&D, and engineering personnel for the first time | |
| ***Exploitative capabilities*** | • Upgraded current knowledge and skills for familiar products and technologies<br>• Strengthened our knowledge and skills for projects that improve efficiency of existing innovation activities<br>• Invested in enhancing skills in exploiting mature technologies that improve productivity of current innovation operations<br>• Upgraded skills in product development processes in which the firm already possesses significant experience<br>• Enhanced competencies in searching for solutions to customer problems that are near to existing solutions rather than completely new solutions | (Atuahene-Gima, 2005; Danneels, 2008; Yalcinkaya et al., 2007) |

| | | |
|---|---|---|
| **Reconfiguration Capabilities** | • Implementation of new or substantially changed company strategy<br>• Implementation of new kinds of management methods<br>• New or substantially changed organisation structure<br>• New or substantially changed marketing method or strategy | Jantunen et al., (2005). |
| **Firm Performance** | • Return on Assets<br>• Return on Sales<br>• Market Share Growth<br>• Sales Growth | Rudd et al., (2008); Titus et al., (2011). Lu and Beamish, 2001 |

In developing the measurement scales the relevant previous literature and studies have been reviewed. Most of the measurements for the constructs in the conceptual model are readily available in the literature for examining the mediating effects of dynamic capabilities on the relationship between EO and performance. This relationship used a total of 27 items:

(1) Three items measuring firm innovativeness

(2) Three items measuring proactiveness

(3) Three items measuring risk taking

(4) Five items measuring exploration capabilities

(5) Five items measuring exploiting capabilities

(6) Four items measuring reconfiguration capabilities

(7) Four items measuring firm performance

Table 3:3 provides a list of the items used for measuring each construct and presents the constructs of the study.

Existing empirically tested measures were used or were adapted to suit the purpose of the study wherever possible. The measures of innovativeness, proactiveness, and risk-taking were adapted from Covin and Slevin (1989). The exploitative and explorative capabilities measure accesses the extent to which a firm engaged in certain product development processes in the previous three years. The items were adapted from prior research (Atuahene-Gima, 2005; Danneels, 2008; Yalcinkaya et al., 2007).

## 3.9 Sampling Design

It is almost impossible or simply not feasible to collect data from every member of a given population; that is to carry out a census. Statistical sampling is therefore used to allow researchers to collect data from a representative subset of the population. The five-step process for sampling design: target population, sample frame, sample method, sample unit and finally sample size (Saunders et al., 2012), is now considered.

### 3.9.1 Target Population

Target population is defined as a group of individuals (or organisations) with some common defining characteristic that a researcher can study Creswell (2013). He argues that the study should identify what group to study, which is therefore termed the target population. The study will then choose a subset (sample) of the target population which is representative of the whole population. The target population of this study is managers/owners of SMEs in Saudi Arabia.

### 3.9.2 Sample Frame

The sample frame is defined as "a listing of the members of the target population that can be used to create and/or draw the sample" (Bruce et al., 2002, p.161). The purpose

of sampling design is to select particular participants from the target population to be surveyed. The sample frame is commonly obtained through the Internet, government or any other trusted resources related to the target population of the research. The sample frame is considered to be a crucial part in sampling design as it affects the cost and quality of the survey. The sample was compiled using the database of the Chamber of Commerce and Industry in Saudi Arabia. In the first step, the companies to be surveyed were randomly drawn from this database. The sample for the survey in this thesis targeted Saudi Arabian SMEs belonging to various industrial, service and marketing sectors, such as food and beverage industries, printing and publishing, chemical industries, industrial machinery, education and training, construction, media, sales, financial services, energy, and information technology. This range of sectors assured a statistically significant sample size for the results to be generalisable.

In order to increase the accuracy of data, and to ensure that the data were received from a reliable, validated source, it was requested that the questionnaire be answered by each firm's manager.

### 3.9.3 Sample Method

The sampling method is used to identify the unit of analysis and the way to obtain information from the target sample (Saunders et al., 2012), and to reduce any possible errors in the sampling process (Davis, 2004). The sampling method may be carried out based on probability or non-probability sampling. In the probability sampling, each individual in the population has an equal probability of being selected. There are four main methods of probability sampling: simple random sampling, systematic sampling, stratified sampling and cluster sampling (Saunders et al., 2012; Bruce et al., 2002).

Non-probability sampling consists of "any sampling techniques that do not involve the selection of sample elements by chance" (Bruce, 2002, p.165). Non-probability

sampling, therefore, does not include in its sample any probability or random selection, which differentiates it from probability sampling. According to Saunders et al. (2012), there are four main methods of non-probability sampling: convenience sampling, snowball sampling, judgment sampling and quota sampling.

Selecting the sampling method depends on the nature of study, the availability of samples and time and financial resources (Hair et al., 2014). In this study, probability sampling was selected because firstly, it supports the aim to generalise the findings since it is based on a representative sample of the population; secondly, all samples are available to participate in the survey; and thirdly, this research has time and budget constraints (Sharma, et al., 2016; Hair et al., 2014).

The simple random method was to select respondents who represent the whole target population, being the Saudi Arabian SMEs. The heterogeneity of this population makes the simple random method the most appropriate option for selecting samples in this study (Saunders et al., 2012).

### 3.9.4 Sampling Unit

Dodge (2003, p. 360) defined the sampling unit as “one of the units into which an aggregate is divided or regarded as divided for the purpose of sampling, each unit being regarded as individual and indivisible when the selection is made”. Therefore, it is essential to identify the sampling unit, as the data will be collected from that ‘identified’ sampling unit in order to allocate the research problem (Davis, 2004). Matthews and Scott (1995) and Becherer and Maurer (1997) posited that the entrepreneur / owner manager who leads the firm greatly influences its culture and entrepreneurial manner. According to Aloulou and Fayolle (2005, p. 30), EO is described as “the strategic orientation reflecting a willingness of a firm to engage in entrepreneurial behaviours".

Moreover, in SMEs, the strategic orientation of the owner / manager is likely to equal the strategic orientation of the firm (Lyon, Lumpkin and Dess, 2000). For this reason, the key informants in this study are the managers / owners of SMEs firms in Saudi Arabia. As Otero-Neira et al. (2009) stated, these participants are considered to be the people who have the most comprehensive knowledge about the organisation's characteristics, strategy and performance, including EO adoption in their firms. In this study, managers/owners of SMEs enterprises were identified as the sample unit.

### 3.9.5 Sample Size

Determining the appropriate sample size is very important in any empirical research, as inadequate sample size or even too large size may affect the quality of the research (Bartlett et al., 2001). The larger the sample size, the less probable it is to produce errors in generalising findings from the sample to the total population and a larger size is more likely to be normally distributed when analysing the resultant data (Saunders et al., 2012). Therefore, the sample size was based on this study's criterion and the accuracy sought.

Many formulas have been used to determine the appropriate sample size based on many factors such as population size, margin of error and confidence level. A formula that has been widely used to guide determining the sample size, particularly in survey research (Saunders et al., 2007) is that below:

$$n^a = \frac{n \times 100}{re\%}$$

Where $n^a$ is the actual sample size, n is the required sample size and re % is the estimated response rate expressed as a percentage.

In order to calculate the formula's variables, the researcher should determine the level of certainty, the normal used level of which is 95%, and the margin of error explains the accuracy of the estimated population. Based on the table prepared by Saunders et al. (2003, p. 212), if the population size is 400, which is within plus or minus 3 to 5 per cent of its true value, and the margin of error is 5%, the required sample size is 196. Hence, the actual sample size is 392 and the estimated response rate is 50%.

### 3.10 Analysis Techniques used for the study.

To understand the data analysis procedures, this study followed the recommendation of Anderson and Gerbing (1988), which claimed that multivariate data analysis must be undertaken in two stages. Firstly, researchers should verify the psychometric properties of manifest variables (i.e. measurement items), and thereafter the examination of the direction of hypotheses should be operationalised. In this sense, this study has conducted an extensive literature review to evaluate the taxonomy of EO and firm performance and identify relevant measurements items of EO dimensions, explorative capabilities, exploitive capabilities, reconfiguration capabilities, and firm performance. Before proceeding to examine the hypotheses, this study followed several data examination processes. These are a reliability and validity test of the constructs, and a measurement model test by confirmatory factor analysis. Once confirmed the reliability and validity issues of the measurement model, this study addressed a structural equation model test to analyse the proposed hypotheses. To examine the conceptual model, WarpPls 6 statistical package was used to elicit the causal relationships among the constructs.

The data was analysed using Structural Equation Modelling (SEM), which is a second-generation multivariate statistical technique used to estimate the parameters of a structural model. The main goal of SEM is to test hypothesised models that depict relationships among variables (Schumacker and Lomax, 2004), taking into account measurement error when statistically analysing data. SEM can be either variance-based, like those used in Partial Least Squares (PLS) analysis, or covariance-based, such as those used in LISREL.

Covariance-based SEM techniques are not considered to be appropriate for some types of studies because they have restrictions. Unlike variance-based SEM, which does not require a sound theory base, covariance-based SEM techniques support only confirmatory types of research, as opposed to exploratory ones. Other restrictions imposed by covariance-based SEM techniques include requirements for normal distribution, large sample size, usually more than 100 cases, and only reflective variables (Gefen et al., 2000). Reflective latent variables refer to indicators of a latent variable which are viewed as affected through the same underlying concept. (Chin, 1998).

Partial Least Squares (PLS), is a multivariate variance-based technique used to estimate the parameters of a structural model. It was developed by Wold (1975) for situations where data cannot meet the restrictive assumptions of covariance-based SEM techniques (Fornell and Bookstein, 1982). PLS maximises the explained variance of dependent variables by disaggregating the overall causal model into partial equations which are solved simultaneously (Chin, 1998).

Variance-based SEM is a multivariate analysis technique that has certain similarities with covariance-based SEM but differs from it in that it builds on techniques, such as resampling, which do not require parametric assumptions to be met (Diaconis and

Efron, 1983; Rencher, 1998). Variance-based SEM is more suitable when the requirement of multivariate normality is not met in a dataset (Chin, 1998).

PLS is preferred by researchers for the flexibilities it offers. PLS can be used for theory development, as it tests and validates exploratory models, does not require a large sample size, can estimate complex models with several latent and manifest variables, does not require normality, is suitable for prediction-oriented research, and can deal with reflective, as well as formative, measurement models (Gefen, et al., 2000; Henseler, et al., 2009).

Several SEM-PLS software programmes exist, such as SmartPLS, PLS Graph and WarpPLS. In this study, the researcher used the WarpPLS 6.0. It is a MATLAB based programme which conducts non-linear regression (Kock, 2013). Unlike the Smart and Graph PLS programmes which only run linear regressions, WarpPLS performs a warping at the path coefficient level using a distinctive robust path analysis technique. In a study comparing linear and non-linear regression programmes, Brewster (2011) acknowledged that non-linear programmes more effectively captured reality when studying management and business issues. The author explained that very few management phenomena exist in a straightforward cause and effect correlation. Hence, using a non-linear regression is more likely to spot relationships that could not be identified applying a linear regression. SEM has become popular among researchers because it takes into account measurement error when statistically analysing data

The measurement model of this study is analysed by following the approach of Churchill Jr (1979), and Slater et al. (2010). Their studies pointed out three conditions of measuring the structural model. Firstly, model fitness was measured by administrating multi stage confirmatory factor analysis. Secondly, psychometric properties were presented by examining the reliability and validity of the latent

constructs and thirdly, a common method variance test was also conducted to avoid any misleading measurement errors.

Once the validity of the measurement model was established, a structural equation modelling (SEM from here onwards) test was carried out. In recent years SEM has become a widely used data analysis process that enables the researcher to assess a set of hierarchical regression equations and a factor analysis concurrently. A SEM study by Cheong and Lecken (2004) asserted that the overall causal conceptual model must assess by operationalising structural equation modelling. Following the three equations from Baron and Kenny (1986) SEM was used to examine the mediation effect of explorative capabilities, exploitive capabilities, and reconfiguration capabilities. The equations are (a) an examination of the relationship between the exogenous construct and the mediator while identifying the linkage between mediator and endogenous construct; (b) the analysis of the connection between exogenous and endogenous constructs without including the mediator; and (c) an investigation of the direct relationship between exogenous and endogenous constructs along with presenting the influence of the mediator within the structural model.

The survey data was analysed by using partial least squares (PLS 6.0) with a two-step analytic approach. First, the measurement model was evaluated to assess the validity and reliability of the measures. Second, the structural model was evaluated to assess the strength of the hypothesized links among the variables. The psychometric properties of all scales were assessed within the context of the structural model through an assessment of discriminant validity and reliability.

### 3.11 Ethical Considerations

Research ethics are concerned with the appropriateness of a researcher's procedures; behaviours regarding the right of participants, particularly in relation to formulating

questions; designing research; obtaining access; data collection; analysis of data; and storage of the data,as well as presenting the findings in moral and proper way (Saunders et al., 2012).

The ethical issues of this study have been evaluated and approved by the research ethics committee of the University of Plymouth based on its ethical codes of practice guide. Gaining ethical approval by this committee is required before collecting the data for either the pilot or the main study. Taking the ethical issues into consideration will enhance the reliability as well as the credibility of the study (Saunders et al., 2012), as it maximises the level of trust between the researcher and participant (Jankowicz, 2000).

Ethical considerations are an important aspect of the research design and methodology and were observed at all stages of the research process. They involved acting honestly and professionally and with the utmost integrity throughout the research process. This included using research data fairly and responsibly, taking care not to include personal views or biases so as to avoid influencing the results, maintaining impartiality, and processing only valid data and developing only those results that could be fully supported by it.

Ethical considerations regarding the participants in the study involved communicating in verbal and in written form (Appendix A) that their confidentiality would be respected, they would remain anonymous, their participation was totally voluntary, and that they could withdraw from the study at any time for any reason. The participants have the right to refuse to allow their personal information to be published. None of those participating in the research is expected to be adversely affected as a result of their participation.

### 3.12 Piloting the Survey

Zikmund et al. (2012) defined the pilot study as a small-scale research exercise that gathers data from a small sample drawn from the same population from which the final sample of the study is drawn. Pilot studies, which involve small numbers of respondents, are used to test and rectify any deficiencies in the intended survey content and procedures, and also address issues of validity and reliability. Questionnaire surveys are the most common data collection tool used in social science research. One way to ensure that a questionnaire will answer the research question is to pilot it. Questionnaire piloting aims to refine the questionnaire so that the respondents will have no problems answering it, to assess the validity of the questions, and to investigate the reliability of the collected data. McNabb (2013) argued that pilot testing assists the identification and elimination of potential problems related to the research questions and research instrument before the questionnaire is sent to the sample population of intended participants.

#### 3.12.1 Content Validity

Validity refers to the extent to which the measuring instrument accurately measures what it is supposed to measure (Bryman and Bell, 2007). Content validity refers to the extent to which the measurement instrument adequately addresses questions. Content validity can be achieved for example, by careful definition of the research topic and assessment by a panel of individuals to determine whether the questionnaire measures what it should measure (Vogt, 2007; DeVellis, 2003; Netemeyer et al., 2003; Ruane, 2005).

The first draft of the questionnaire was checked by nine doctoral students who specialised in business and computer science. They were requested to judge the design of the questionnaire and its readability, and to see how well they could understand the

questions. Most of the feedback related to the order of the questions on the questionnaire form, which resulted in the design of a new form. The second draft of the questionnaire was then sent to five academics to check its validity: three senior lecturers in the UK (one specialising in strategic management, one in business, and one in tourism, and two professors in Saudi Arabia, specialising in entrepreneurship. The comments from this panel included:

(1) Do not use technical terminology, such as reversibility, trialability, modifiability and observability, since they might not be understood by the respondents

(2) Answering the questions about personal information which is needed for the study should not be optional

(3) The rationale for each part of the questionnaire should be explained to the participants

(4) The questionnaire form was in a very congested format, and the questions should be spread out more.

All of the members of the panel recommended piloting the questionnaire on SMEs. The experts' comments were considered, explanations were provided for technical terms, and a third draft of the questionnaire produced. One member of the panel recommended translating the form into Arabic, the mother tongue of the respondents. Therefore, it was decided to translate the form before proceeding to pilot it on SMEs.

### 3.12.2 Questionnaire translation

It is extremely important in international research that translated questions have the same meaning as the source questionnaire. Validating the source questionnaire is not a guarantee that the translated form will be valid unless translation validity procedures

are followed. There are a number of techniques used in translating a source questionnaire.

(1) Translate the source questionnaire directly to produce the target questionnaire.

(2) Use back-translation that is translating the target questionnaire back into the original language and comparing it to the source.

(3) Parallel translation that is having the source questionnaire translated by two independent translators, then comparing the two resulting questionnaires and creating a final version from them.

(4) Use the mixed technique – follow the parallel translation method, then have the resulting target questionnaire translated back into the source language by two other independent translators, and compare the two resulting source questionnaires, then create the final version (Saunders et al., 2009, Usunier, 1998).

Although back-translation can correct most translation problems, the mixed technique has the advantages of back-translation but also ensures the best match between the source and the target. In this study, therefore, the mixed technique was used to translate the English source questionnaire into the Arabic target questionnaire, and then back-translation was used. The two resulting source questionnaires were compared by a specialist British native speaker (with a PhD in entrepreneurship). Three items were found to have different meanings in the new source questionnaires. The five items were rephrased in the development of the final questionnaire.

### 3.12.3 Pilot Construct validity

Construct validity refers to how the constructs are measured by the instrument. Construct is another term for concept (Vogt, 2007). Construct validity is based on the background used to conceptualise the causal relationships among the constructs and how they correlate with each other (Bryman and Bell, 2007).

The questionnaire was piloted on 60 randomly chosen SMEs to assess the construct validity, although a sample of ten is considered adequate for piloting questionnaires (Saunders et al., 2003). Corrected item-total correlations were used to measure the constructs of the study and its indicators. Indicator loadings between 0.35 and 0.80 in corrected item-total correlations are deemed to show that the retained indicators are valid for measuring the one construct in question (Netemeyer et al., 2003).

As the corrected item-total correlations are calculated jointly within the reliability statistics, the next two sections present the descriptive statistics that show for each item whether the respondents agreed or disagreed with it, the mean scaled responses, the reliability statistics, Cronbach's alpha if the item was deleted, and the corrected item-total correlations.

### 3.12.4 Reliability statistics

Reliability is statistical measure of how reproducible the survey instrument's data are (Litwin, 1995). One type of reliability is internal consistency; it is measured by calculating Cronbach's alpha, which measures the homogeneity of a scale formed of multiple items. Cronbach's alpha takes values ranging from 0 (measures are totally inconsistent) to 1 (items correlate perfectly). A high value reflects good internal consistency of the items in the scale (George and Mallery, 2003). Many researchers agree that a value of 0.5 or less indicates an unacceptable scale, some have stated that a value of 0.6 is required (Liu and Arnett, 2000, Leblanc, 1992, Heung and Chu, 2000), while others have stated that it should be at least 0.7 (Hair et al., 2010; Field, 2009;

Vogt, 2007). The values of Cronbach's alpha for the seven main constructs of this study are 0.819 for innovativeness, 0.733 for proactiveness, 0.725 for risk-taking, 0.850 for exploring capabilities, 0.862 for exploiting capabilities, 0.811 for reconfiguration capabilities, and 0.837 for firm performance. These values highlight the reliability of the constructs in the questionnaire.

Corrected item-total correlations are obtained from reliability statistics. The values of these correlations reflect how one item is correlated with the other items in a given set of items. It is used to determine a set of candidate items to be retained in a scale, which will achieve construct validity. There is much discussion over the exact values of these correlations that should be used to determine which items to retain in a scale; one rule states that the correlations should be above 0.30 (Field, 2009), another that they should be greater than 0.35, others that they should be between 0.50 and 0.80. The rule used in this study to achieve construct validity is that item (i) should be retained if $0.35 < i < 0.80$ (Netemeyer et al., 2003).

Beginning with the innovativeness items, Table 3-4 shows that the values of corrected item-total correlations were more than 0.35. Therefore, there were no deleted items for constructs which retained all items.

Table 3:4:Innovativeness items in the final questionnaire version

| **Innovativeness** | **Corrected item-total correlation** | **Cronbach's alpha if item deleted** |
|---|---|---|
| There exists a very strong emphasis on the development of new and innovative products | 0.468 | 0.878 |
| In the last 3 years we have developed many new lines of products or services | 0.580 | 0.923 |
| Changes in product or service lines have usually been quite dramatic | 0.691 | 0.863 |

Table 3-4, 3-5, and 3-6, show that all proactiveness, risk taking, and exploring capabilities items had values above 0.35. These items were retained in the final questionnaire form

Table 3:5: Proactiveness items in the final questionnaire version

| **Proactiveness** | **Corrected item-total correlation** | **Cronbach's alpha if item deleted** |
|---|---|---|
| Typically, initiate actions to which competitors then respond | 0.438 | 0.850 |
| Is very often the first business to, introduce new products/services, administrative techniques, operating technologies, etc. | 0.402 | 0.739 |
| Typically adopts a very competitive, "competitors" posture. | 0.539 | 0.875 |

Table 3:6: Risk taking items in the final questionnaire version

| **Risk-taking** | **Corrected item-total correlation** | **Cronbach's alpha if item deleted** |
|---|---|---|
| In general, we have a strong proclivity for high-risk projects (with chances of very high returns) | 0.705 | 0.850 |
| In general, we believe that owing to the nature of the environment, bold, wide-ranging acts are necessary to achieve the firm's objectives | 0.489 | 0.739 |
| Typically adopts a bold, aggressive posture in order to maximize the probability of exploiting potential opportunities | 0.386 | 0.875 |

Table 3:7: Explorative capabilities items in the final questionnaire version

| **Explorative capabilities** | **Corrected item-total correlation** | **Cronbach's alpha if item deleted** |
|---|---|---|
| Acquired manufacturing technology and skills entirely new to the firm | 0.758 | 0.873 |
| Learned product development skills and processes (e.g. product design, prototyping new products, timing of new product | 0.437 | 0.920 |

| | | |
|---|---|---|
| introductions, customising products for local markets) entirely new to the industry | | |
| Acquired entirely new managerial and organisational skills that are important for innovation (e.g. forecasting technological and customer trends, identifying emerging markets and technologies, marketing, manufacturing and other functions, managing product development process) | 0.602 | 0.892 |
| Strengthened innovation skills in areas where it had no prior experience | 0.543 | 0.845 |
| Learned new skills in areas such as funding new technology, staffing R&D function, training and development of R&D, and engineering personnel for the first time | 0.473 | 0.848 |

Regarding exploiting capabilities, Table 3-7 shows that corrected item-total correlations were more than 0.35. Therefore, there were no deleted items. Items were retained to the final questionnaire.

Table 3:8: Corrected item-total correlations for exploiting capabilities

| **Exploitation capabilities** | **Corrected item-total correlation** | **Cronbach's alpha if item deleted** |
|---|---|---|
| Upgraded current knowledge and skills for familiar products and technologies? | 0.674 | 0.895 |
| Strengthened our knowledge and skills for projects that improve efficiency of existing innovation activities? | 0.595 | 0.902 |
| Strengthened our knowledge and skills for projects that improve efficiency of existing innovation activities? | 0.394 | 0.879 |
| Upgraded skills in product development processes in which the firm already possesses significant experience | 0.679 | 0.894 |
| Enhanced competencies in searching for solutions to customer problems that are near to existing solutions rather than completely new solutions | 0.406 | 0.815 |

Exploiting capabilities construct, Table 3-7 shows no deletion.

Table 3:9: Reconfiguration capabilities items

| Reconfiguration capabilities | Corrected item-total correlation | Cronbach's alpha if item deleted |
|---|---|---|
| implementation of new or substantially changed company strategy | 0.439 | 0.930 |
| implementation of new kinds of management methods | 0.637 | 0.837 |
| new or substantially changed organisation structure | 0.389 | 0.739 |
| new or substantially changed marketing method or strategy | 0.739 | 0.803 |

Table 3-8 shows that all reconfiguration capabilities and firm performance items had values above 0.35. These items were retained in the final questionnaire form.

Table 3:10: Firm performance items

| Firm Performance capabilities | Corrected item-total correlation | Cronbach's alpha if item deleted |
|---|---|---|
| Return on Assets | 0.758 | 0.901 |
| Return on Sales | 0.704 | 0.874 |
| Market Share Growth | 0.639 | 0.930 |
| Sales Growth | 0.721 | 0.899 |

Consequently, the questionnaire is valid for collection the data from the target sample which is SEMs in Saudi Arabia. The section below describes the data collection process in detail.

### 3.13 Data Preparation and Collection Process

The data collection process can face many challenges, such as unwillingness to participate in the survey due to time constraints; lack of interest; and unwillingness to provide 'sensitive' information about themselves. Hinkin (1995) suggested that testing an instrument on a totally new sample increases validity and reliability. A sample was drawn from SMEs operating in Saudi Arabia. Random sampling of SMEs included firms from the Saudi Chamber of Commerce and Industry. The sample consists of

SMEs that are located in Saudi Arabia, where the SMEs provide the context to apply the EO and DC framework; are independent businesses created by an individual or a team of individuals in the year before the survey; have a legal business identity; were listed in the data base of the Chamber of Commerce and Industry in 2014; and had fewer than 200 employees.

The questionnaires were sent to SMEs managers/owners mainly because of their knowledge of the SME's strategies and operations, moreover they are able to identify the changes within the SMEs and know how change is being implemented. A probability sampling procedure called simple random sampling is used, and samples are taken from the sampling frame, which is the Saudi Arabia Association of SMEs' database.

An email survey was used to collect data. The survey was administered following the total design method for survey research. An internet tool was used to distribute the surveys. Emails were sent including a link for the questionnaire. The body of the email was the covering letter. Before sending the email, the researcher confirmed that the survey contained a cover letter that clearly and briefly explained the purpose of the study, and contained a statement assuring the full anonymity and confidentiality of respondents (Saunders et al., 2012). The motivations and implications of the study and a target return date of two weeks was also confirmed (Rea and Parker, 2012).

A total of 1100 firms were sent the questionnaires, and 450 completed them s. Each collected form was reviewed for completeness necessary to the analysis. After data cleansing and screening a total of 418 of the completed forms were found useable for analysis, resulting in a 38 % response rate. The use of online questionnaires has been deemed appropriate in Saudi Arabia due to its vast size and the difficulty of reaching each company's office individually. It is important to recognise that posting a large

number of questionnaires to Saudi Arabia can be costly and time consuming. Van Selm and Jankowsky, (2006) argued that internet surveys have a higher response speed compared with mailed ones and an economic advantage.

### 3.14 Summary

This study uses quantitative methods situated within the positivist philosophy, and a deductive approach is employed to test the causal relationships amongst the quantitative variables. A questionnaire survey is used to collect the quantitative data from owners / managers of SMEs in Saudi Arabia. Simple random techniques are used to select the subjects.

The issues of content and construct validity of the questionnaire form were addressed to ensure that the measuring instrument was appropriate. The questionnaire form was first checked by nine PhD students to ensure its readability. Next, the questionnaire was sent to a panel of academics to ensure that the form properly covered the concepts it was meant to investigate. The questionnaire was then translated into Arabic to ensure that the questions would be fully understood by the respondents, whose mother tongue is Arabic. The mixed technique of translation was used to validate the Arabic copy and ensure it matched the original as well as possible. To validate the seven main constructs of the study, corrected item-total correlations were calculated. The reliability statistics show that the retained items in all the constructs were adequate.

# 4 CHAPTER FOUR: FINDINGS AND DISCUSSION

## 4.0 Introduction

This chapter presents the results of the study and discussion. It includes two main sections. The findings will be the first section which opens with the pre-analysis process that explains the data preparation, coding, cleaning and screening. Then, it moves to evaluate non-response bias, followed by addressing and explaining the outliers. Next, multicollinearity was monitored and examined, and a normality test performed and discussed. It also evaluates the measurement model by investigating confirmatory factor analysis. Finally, the findings section ends by testing the research hypotheses (structure model) by using warp PLS.

The second section of this chapter discusses the results and findings of the study. It discusses the findings in the light of previous studies and the context of the study. It starts with presenting a brief overview of the study and then provides a detailed discussion of each set of variables with their related effects.

## 4.1 Findings

### 4.1.1 Pre-analysis Data Processing

After completion of data collection, it was very important to have them examined through conversion into a form suitable for data analysis to ensure their integrity, significance, accuracy and representability.

#### 4.1.1.1 Data Coding

Coding refers to "the process of assigning numerals or other symbols to answers so that responses can be put into a limited number of categories or classes" (Kothari, 2004, p.

123). This means that each category of answers in the questionnaire will be allocated a specific code that will help the researcher transfer it into a form identifiable by computer and make subsequent analysis easier (Saunders et al., 2012). In this study, the continuous response scale used a pre-coded technique by allocating numbers for each question, with No. 1 meaning 'strongly disagree' and No. 5 'strongly agree', which facilitated the respondents' task. The Likert scale avoids the problem of development of pairs of dichotomous adjectives. The scale consists of a series of statements expressing either a favourable or an unfavourable attitude toward the concept under study. The respondent will be asked to indicate the level of her or his agreement or disagreement with each statement by assigning it a numerical score. The scores are then totalled to measure the respondents attitudes. The collected data were entered into SPSS and the codes were labelled for each variable to illustrate the meaning of codes.

Table 4:4:1: Variables Coding

| Variables | Codes |
|---|---|
| **The Independent Variable** | |
| Innovativeness | **INN** |
| Proactiveness | **PRO** |
| Risk Taking | **RSK** |
| **The Mediating Variable** | |
| Exploring Capabilities | **EXP** |
| Exploiting Capabilities | **EXT** |
| Reconfiguration / transformation | **REC** |
| **The Dependent Variable** | |
| Firm Performance | **PER** |

#### 4.1.1.2 Data Cleaning and Screening

Data cleaning and screening was conducted in this study before any further statistical analyses to ensure that the entered data are free of any coding errors or missing data or

any inappropriate responses. This process was very important to ensure that the entered data includes only accurate values that are essential for examining the casual theory. Descriptive statistics and frequency tables were employed using SPSS to identify the missing data in range values and inconsistent responses (Saunders et al., 2012). Missing data must be considered in order to decide how to deal with it. According to Dong and Peng (2013) the missing data can be at unit and item levels. Unit level refers to respondents who fail to take or entirely refuse to complete the survey, while item level refers to those who return the survey with incomplete answers.

Item level occurs for two main reasons. First, the respondent may fail to answer part(s) of the questionnaire because of lack of information, unwillingness to answer some 'sensitive' questions or omitting to answer some questions. Second, the respondent may not have time to finish answering the questionnaire (Saunders et al., 2012). Also, Saunders et al. (2012) defined three patterns of missing data: Missing Completely At Random (MCAR), Missing At Random (MAR) and Missing Not At Random (NMAR). MCAR occurs when the missing values for a variable are not correlated with that variable itself or any other variable of interest. As for MAR, it occurs when the missing values for a variable are not correlated with that variable itself but with other variables. In NMAR, the missing values for a variable are correlated with that variable itself and with other variables. Therefore, it was essential for this study to address the missing data problem to avoid embarking on false findings, which would compromise internal validity, leading to loss of statistical power and external invalidity when research results are to be generalized. There are different approaches to addressing the missing data such as list-wise deletion, pairwise deletion, mean substitution, estimation of conditional means, imputation using the expectation maximization algorithm (EM), multiple imputation and regression-based imputation (Dong and Peng, 2013).

In this study, the percentage of missing data was identified before conducting further statistical inferences. Out of the 450 responses, 32 were missing. On average, this accounts for approximately 7% of all responses. Although, there is no agreement in the related literature about the acceptable percentage of missing data, many studies agree that 10% is considered acceptable (Schlomer et al., 2010). Therefore, 32 forms were excluded.

#### 4.1.1.3 Assessing Non-Response Bias

The non-response bias is important to address, especially given that the response rate in this study was 38%. This bias occurs when respondents in the sample refuse to participate in the survey due to certain characteristics they may have. The existence of non-response bias is prone to result in a major problem in the study because it would generate bias in the sample which undermines its validity and quality (Linder et al., 2001). Non-response bias can be evaluated by comparing the responses of early and late respondents. Lindner et al. (2001) suggested that the early and late comparison of respondents' data is the most widely used method in quantitative research to identify nonresponse bias. They argue that if there are no significant differences between early and late respondents, the study results can be generalised to the population. This study considered the first 100 responses as early responses because they responded fast without any further efforts by the researcher, while the last 100 responses are considered late responses due to the efforts exerted to obtain them. There was no consensus around the number of items which should be tested.

Lambert and Harrington (1990) chose 28 of 56 original questions, whilst (Yaghi, 2006) randomly selected y 20 of 74 items, and Kaleka (2012) used nine randomly selected items. The results obtained (see Appendix 4) illustrated that the significance value for Levene's test is higher than .05 and hence, it can be assumed that both groups share the same variances. It can be noted that the t-values "Sig. (2-tailed)" are non-significant (p values greater than 0.05) for almost all items, implying that there is no significant difference between the two groups. Therefore, it can be concluded that both samples used in the present study are indeed representative of the whole population. These results do not rule out the possibility of non-response bias, but they suggest that non-response may not be a problem.

#### 4.1.1.4 Common Method Bias

Common method bias means that a single factor can erroneously explain most of a variance. This can occur, for example, where researchers rely on the same respondent who provides information about all the variables (Podsakoff et al., 2012). Common method bias is considered to be the main source of measurement error which has a negative effect on the validity of the measure (Podsakoff et al., 2003), which means that correlations are inflated (Meade et al., 2007).

This study had to investigate this method because it uses one questionnaire to measure all constructs, including Innovativeness, Proactiveness, Risk Taking, Exploring Capabilities, Exploiting Capabilities, Reconfiguration and Firm Performance. The study employed Harman's one-factor test to evaluate common method bias (Podsakoff et al., 2003). The un-rotated factor analysis showed that the first factor accounted for 8.378% of the total variance (Appendix C). Therefore, the results suggest that there was no common variable (its value was not above 50%) which would require the data to be analysed further.

### 4.1.2 Descriptive statistics

A total of 418 respondents were surveyed, 213 were men (51.0 %) and 205 were women (49.0 %). The majority of firms were small (57.0 %) and were industrial firms (40.0 %), Table 4.2 shows the respondents' demographics.

Table 4:4:2: Sample profile

| Category | | | |
|---|---|---|---|
| **Total subjects** | | 418 | |
| **Gender** | Males | 213 | (51%) |
| | Females | 205 | (49%) |
| **Education level** | Bachelor | 188 | (45%) |
| | Diploma | 146 | (35%) |
| | Master or PhD | 84 | (20%) |
| | Other | - | |
| **Company sector** | Industrial | 168 | (40%) |
| | Service | 150 | (36%) |
| | Marketing | 100 | (24%) |
| **Age** | <25 | 13 | (3%) |
| | 25<30 | 159 | (38%) |
| | 31<40 | 226 | (54%) |
| | 41<50 | 21 | (5%) |
| | >50 | - | |

Table 4:4:3: Descriptive statistics and normality tests of the constructs in the model

| Construct | Items | Mean | Standard deviation | Skewness | Kurtosis |
|---|---|---|---|---|---|
| **INN** | INN1 | 3.92 | 1.150 | -1.067 | .204 |
| | INN2 | 3.93 | 1.151 | -1.131 | .442 |
| | INN3 | 3.90 | 1.201 | -1.065 | .102 |
| **PRO** | PRO1 | 4.02 | 1.141 | -1.220 | .688 |
| | PRO2 | 4.02 | 1.120 | -1.248 | .795 |
| | PRO3 | 4.03 | 1.129 | -1.342 | 1.039 |
| | RSK1 | 4.01 | 1.132 | -1.196 | .589 |

| | | | | | |
|---|---|---|---|---|---|
| **RSK** | RSK2 | 4.08 | 1.066 | -1.348 | 1.180 |
| | RSK3 | 4.11 | 1.139 | -1.528 | 1.569 |
| **EXP** | EXP1 | 4.00 | 1.195 | -1.285 | .697 |
| | EXP2 | 4.00 | 1.164 | -1.242 | .706 |
| | EXP3 | 3.92 | 1.197 | -1.125 | .288 |
| | EXP4 | 3.93 | 1.212 | -1.139 | .298 |
| | EXP5 | 4.01 | 1.134 | -1.289 | .922 |
| **EXT** | EXT1 | 3.98 | 1.078 | -1.200 | .948 |
| | EXT2 | 4.02 | 1.093 | -1.180 | .634 |
| | EXT3 | 3.98 | 1.112 | -1.182 | .690 |
| | EXT4 | 4.05 | 1.066 | -1.306 | 1.204 |
| | EXT5 | 4.04 | 1.079 | -1.330 | 1.290 |
| **REC** | REC1 | 4.00 | 1.074 | -1.174 | .678 |
| | REC2 | 4.08 | 1.044 | -1.199 | .703 |
| | REC3 | 4.11 | .967 | -1.283 | 1.406 |
| | REC4 | 4.03 | 1.114 | -1.216 | .630 |
| **PER** | PER1 | 4.09 | 1.009 | -1.450 | 2.066 |
| | PER2 | 4.15 | .940 | -1.303 | 1.661 |
| | PER3 | 4.14 | .954 | -1.376 | 1.963 |
| | PER4 | 4.20 | .987 | -1.576 | 2.351 |

**Notes:**
**INN:** Innovativeness; **PRO**: Proactiveness; **RSK**: Risk Taking; **EXP**; Exploring Capabilities; **EXT**: Exploiting Capabilities; **REC**: Reconfiguration/ transformation; **PER:** Firm Performance.

### 4.1.3 Structural Equation Modelling

SEM is a "statistical methodology that takes a confirmatory (i.e., hypothesis-testing) approach to the analysis of a structural theory bearing on some phenomenon" (Byren, 2013, p. 3). The main goal of SEM is to explain the relationships among multiple variables using a series of multiple regression equations. Theory plays a fundamental role in SEM. It is the main definer of the model's relationships and forms the base from which to hypothesise cause and affect relationships (Hair et al., 2014). In SEM procedure causal relationships between constructs under investigation are represented

by multiple regressions, allowing a simultaneous analysis of the entire system of variables which forms the hypothesised model and determines the hypothesised model's consistency with the data (Byren, 2013).

A model is "a representation of a systematic set of relationships providing a consistent and comprehensive explanation of phenomena" (Hair et al., 2014, p. 549). For a clearer conceptualisation of the theory under study, SEM models are pictorially modelled in a path diagram (Byren, 2013). There are two types of variables involved in SEM: the latent variables and the observed variables. Latent variables, which are also known as factors, are hypothetical explanatory variables that cannot be observed directly (Kline, 2011). Observed variables, on the other hand, are those indicators used as an indirect measure of these latent variables (Kline, 2011).

So far, older generations of multivariate procedures have been classified as either interdependence or dependence techniques. SEM, on the other hand, is considered a combination of both techniques. This assumption is attributed to the foundation of SEM which lies in two multivariate techniques: factor analysis and multiple regression analysis (Hair et al., 2014).

Table 4:4:4: illustrates the research variables included in the research

| Variables | Codes |
|---|---|
| The Independent Variables | |
| Innovativeness | INN |
| Proactiveness | PRO |
| Risk Taking | RSK |
| The Dependent Variable | |
| Performance | |
| The Mediating Variable | |
| Exploration | EXP |

| | |
|---|---|
| Exploitation | EXPT |
| Reconfiguration | REC |

#### 4.1.3.1. The Measurement Model

The measurement model is a specification of the measurement theory that shows how constructs are operationalised by sets of measured variables (Hair et al., 2014). It describes the relationships between the latent variables and the observed variables by providing the link between scores on a measuring instrument (the observed indicator variables) and the underlying constructs they are designed to measure (the unobserved latent variables) (Byren, 2013). The statistical method used to analyse these relationships between observed and latent variables is known as factor analysis.

A measurement model is employed to evaluate individual, construct reliability, convergent and discriminant validity to discover the extent to which the measures have adequate internal consistence.

#### *4.1.3.2 Validity Assessment - Discriminant Validity*

Discriminant validity refers to the extent to which each construct differs from other constructs (Hair et al., 2010). Discriminant validity exists if there is no strong relationship between the constructs (Colton and Covert, 2007). Discriminant validity is evaluated by the square root of the AVE, which must be greater than the correlations between the constructs (Fornell and Larcker, 1981). If the AVE for each construct is greater than its shared variance (which is the amount of variance that a variable (construct) is able to explain in another variable) with any other construct, discriminant validity is supported. Table 5.6 shows that the square root of the AVE is greater than the correlations between the constructs (Fornell and Larcker, 1981). This condition is

satisfied for all constructs. The correlation matrix reported, also, that there were significant correlations (P<0.001) between the constructs.

Table 4:4:5: Correlation between Latent Variables and Square Roots of AVEs

| Factors | INN | PRO | RSK | EXP | EXT | REC | PER |
|---|---|---|---|---|---|---|---|
| **INN** | **(0.792)** | | | | | | |
| **PRO** | 0.456 | **(0.812)** | | | | | |
| **RSK** | 0.541 | 0.684 | **(0.816)** | | | | |
| **EXP** | 0.555 | 0.602 | 0.755 | **(0.767)** | | | |
| **EXT** | 0.390 | 0.304 | 0.393 | 0.396 | **(0.726)** | | |
| **REC** | 0.214 | 0.146 | 0.130 | 0.176 | 0.506 | **(0.725)** | |
| **PER** | 0.363 | 0.267 | 0.337 | 0.356 | 0.697 | 0.327 | **(0.807)** |

#### *4.1.3.3 Full Collinearity VIFs*

Warp PLS produces full collinearity Variance Inflation Factors (VIFs) for all latent variables (see Table 4.7). It is used to measure discriminant validity and overall collinearity. VIFs are evaluated based on a full collinearity test which helps the identification of not only vertical but also lateral collinearity. It enables the testing of collinearity involving all latent variables in a model (Kock, 2013). "Vertical, or classic, collinearity is predictor-predictor latent variable collinearity in individual latent variable blocks. Lateral collinearity is a new term that refers to predictor-criterion latent variable collinearity; a type of collinearity that can lead to particularly misleading results" (Kock, 2013, p. 13). A rule of thumb, full collinearity VIFs must be 3.3 or lower to suggest no multicollinearity in the model (Kock, 2013). Table 4.7 shows that for all latent variables, full collinearity VIFs was lower than 3.3. Hence, the latent variables had no problem of multicollinearity and there was discriminant validity for these variables.

Table 4:4:6: Full Collinearity VIFs

| Factors | INN | PRO | RSK | EXP | EXT | REC | PER |
|---|---|---|---|---|---|---|---|
| **VIFs** | 1.614 | 1.964 | 3.020 | 2.593 | 2.504 | 1.367 | 1.993 |

Table 4:4:7: Indicator Weights

| | Indicator Weights | P value | VIFs |
|---|---|---|---|
| **INN1** | 0.428 | <0.001 | 1.416 |
| **INN2** | 0.433 | <0.001 | 1.444 |
| **INN3** | 0.401 | <0.001 | 1.290 |
| **PRO1** | 0.408 | <0.001 | 1.462 |
| **PRO2** | 0.407 | <0.001 | 1.452 |
| **PRO3** | 0.416 | <0.001 | 1.514 |
| **RSK1** | 0.403 | <0.001 | 1.456 |
| **RSK2** | 0.411 | <0.001 | 1.514 |
| **RSK3** | 0.412 | <0.001 | 1.518 |
| **EXP1** | 0.250 | <0.001 | 1.536 |
| **EXP2** | 0.263 | <0.001 | 1.678 |
| **EXP3** | 0.250 | <0.001 | 1.542 |
| **EXP4** | 0.263 | <0.001 | 1.665 |
| **EXP5** | 0.276 | <0.001 | 1.895 |
| **EXT1** | 0.269 | <0.001 | 1.497 |
| **EXT2** | 0.279 | <0.001 | 1.491 |
| **EXT3** | 0.268 | <0.001 | 1.530 |
| **EXT4** | 0.276 | <0.001 | 1.897 |
| **EXT5** | 0.286 | <0.001 | 1.931 |
| **REC1** | 0.384 | <0.001 | 1.532 |
| **REC2** | 0.338 | <0.001 | 1.283 |
| **REC3** | 0.350 | <0.001 | 1.376 |
| **REC4** | 0.303 | <0.001 | 1.195 |
| **PER1** | 0.316 | <0.001 | 1.811 |
| **PER2** | 0.303 | <0.001 | 1.633 |
| **PER3** | 0.313 | <0.001 | 1.761 |
| **PER4** | 0.307 | <0.001 | 1.678 |

Notes: P values < 0.05 and VIFs < 2.5 are desirable for formative indicators; VIF = indicator variance inflation factor; WLS = indicator weight-loading sign (-1 = Simpson's paradox in l.v.); ES = indicator effect size

### *4.1.3.4 Convergent Validity*

Validity refers to the ability of an instrument to measure what it is intended to measure (Colton and Covert, 2007). Convergent validity is a measure of how well the items in a scale converge or 'load together,' on a single latent construct (Ketchen et al., 2007). The researcher evaluated Average Variance Extracted (AVE) which was the mean variance extracted for the items loading on a construct (Hair et al., 2010). AVE should be greater than 0.50. Table 5.5 demonstrates that, for each latent variable, the AVE is greater than 0.50. Hence, this measure is consistent with the rule of convergent validity

Table 4:4:8: Average Variances Extracted

| **Factors** | **INN** | **PRO** | **RSK** | **EXP** | **EXT** | **REC** | **PER** |
|---|---|---|---|---|---|---|---|
| AVE | 0.627 | 0.660 | 0.665 | 0.589 | 0.526 | 0.525 | 0.625 |

Table 4:4:9: Structure loadings and cross-loadings for latent variables

| **Items** | INN | PRO | RSK | EXP | EXT | REC | PER | **P value** |
|---|---|---|---|---|---|---|---|---|
| **INN1** | **0.805** | 0.339 | 0.382 | 0.440 | 0.327 | 0.197 | 0.319 | <0.001 |
| **INN2** | **0.816** | 0.291 | 0.369 | 0.359 | 0.331 | 0.222 | 0.282 | <0.001 |
| **INN3** | **0.754** | 0.462 | 0.544 | 0.526 | 0.265 | 0.083 | 0.260 | <0.001 |
| **PRO1** | 0.336 | **0.808** | 0.526 | 0.456 | 0.218 | 0.093 | 0.180 | <0.001 |
| **PRO2** | 0.385 | **0.805** | 0.530 | 0.488 | 0.261 | 0.166 | 0.208 | <0.001 |
| **PRO3** | 0.390 | **0.823** | 0.609 | 0.521 | 0.261 | 0.097 | 0.262 | <0.001 |
| **RSK1** | 0.443 | 0.514 | **0.804** | 0.567 | 0.363 | 0.155 | 0.310 | <0.001 |
| **RSK2** | 0.445 | 0.560 | **0.820** | 0.619 | 0.313 | 0.080 | 0.276 | <0.001 |
| **RSK3** | 0.436 | 0.598 | **0.822** | 0.659 | 0.286 | 0.085 | 0.239 | <0.001 |
| **EXP1** | 0.438 | 0.497 | 0.627 | **0.737** | 0.363 | 0.155 | 0.294 | <0.001 |
| **EXP2** | 0.432 | 0.481 | 0.558 | **0.774** | 0.255 | 0.127 | 0.227 | <0.001 |
| **EXP3** | 0.390 | 0.455 | 0.601 | **0.735** | 0.301 | 0.109 | 0.292 | <0.001 |
| **EXP4** | 0.400 | 0.408 | 0.545 | **0.774** | 0.319 | 0.162 | 0.287 | <0.001 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **EXP5** | 0.465 | 0.471 | 0.570 | **0.814** | 0.285 | 0.121 | 0.269 | <0.001 |
| **EXT1** | 0.313 | 0.210 | 0.261 | 0.242 | **0.709** | 0.424 | 0.331 | <0.001 |
| **EXT2** | 0.352 | 0.284 | 0.318 | 0.325 | **0.734** | 0.417 | 0.428 | <0.001 |
| **EXT3** | 0.229 | 0.166 | 0.250 | 0.222 | **0.704** | 0.381 | 0.363 | <0.001 |
| **EXT4** | 0.253 | 0.205 | 0.260 | 0.314 | **0.728** | 0.310 | 0.685 | <0.001 |
| **EXT5** | 0.266 | 0.234 | 0.333 | 0.328 | **0.752** | 0.307 | 0.705 | <0.001 |
| **REC1** | 0.084 | 0.041 | 0.044 | 0.069 | 0.324 | **0.807** | 0.187 | <0.001 |
| **REC2** | 0.146 | 0.075 | 0.036 | 0.117 | 0.314 | **0.710** | 0.180 | <0.001 |
| **REC3** | 0.044 | 0.045 | 0.028 | 0.052 | 0.310 | **0.736** | 0.188 | <0.001 |
| **REC4** | 0.385 | 0.293 | 0.301 | 0.302 | 0.552 | **0.636** | 0.424 | <0.001 |
| **PER1** | 0.270 | 0.187 | 0.277 | 0.289 | 0.636 | 0.217 | **0.825** | <0.001 |
| **PER2** | 0.320 | 0.211 | 0.286 | 0.304 | 0.548 | 0.292 | **0.789** | <0.001 |
| **PER3** | 0.291 | 0.252 | 0.266 | 0.300 | 0.534 | 0.248 | **0.815** | <0.001 |
| **PER4** | 0.293 | 0.214 | 0.259 | 0.256 | 0.530 | 0.300 | **0.800** | <0.001 |

#### *4.1.3.4 Construct Reliability*

The researcher evaluated the individual item reliability through combined loadings and cross loadings. The loadings were from a structure matrix (un-rotated) which included Pearson correlations between indicators and latent variables. The cross-loadings were from a pattern matrix (rotated) whereas cross-loading contained all the 27 observed items; this was loaded on the specified latent variables. These values were always between -1 and 1 (Kock, 2013). Hair et al. (2010) recommended that the loadings ought to be 0.50 or above and P values related to the loadings should be lower than 0.05. Tables 5.3 shows that compared to other latent variables, the factor loadings loaded higher on their theoretical specific latent variable. The loading on all items exceeded 0.50 ($p<0.001$). These results indicated that these measurement items were satisfied according to these criteria and they had individual item reliability.

#### *4.1.3.5 Reliability Assessment*

As mentioned previously, reliability expresses the extent to which a measure produces the same results on different occasions. The reliability can be evaluated through several methods such as internal consistency; this refers to a set of items in measuring a latent construct which is composed of a set of reflective indicators. Examining internal consistency allows the researcher to compare results across and between items within a single instrument (Colton and Covert, 2007). Traditionally, Cronbach's alpha coefficient is the most commonly used measure of scale reliability (Ketchen and Bergh, 2009). Furthermore, reliability, in SEM, can be assessed by using construct or composite reliability (CR) which addresses internal consistency. As a rule of thumb, alpha and CR should be at least 0.7 to reach internal reliability (DeVaus, 2002). Table 4.4 shows that Cronbach's alpha coefficients and composite reliability coefficients were equal to and greater than 0.70. Therefore, this measure has internal consistency.

Table 4:4:10: Reliability Assessment

| Factors | Cronbach's alpha coefficients | Composite reliability coefficients |
|---|---|---|
| INN | 0.702 | 0.834 |
| PRO | 0.742 | 0.853 |
| RSK | 0.748 | 0.856 |
| EXP | 0.825 | 0.877 |
| EXT | 0.775 | 0.847 |
| REC | 0.696 | 0.815 |
| PER | 0.882 | 0.882 |

### 4.1.2 Assessing the Structural Model

A structural model is described as causal relationships between latent variables. The structural model aims to test the hypothesised research model. The overall fit of the model fit indices was evaluated by using the following three measures: Average Path

Coefficient (APC); Average R-squared (ARS) and Average Variance Inflation Factor (AVIF). Kock (2014) recommended that APC and ARS were significant (P< 0.05) whilst the AVIF value ought to be below 5. Table 4.11 reports that these measures were in the range of the fitting model and, therefore, there was a good fit model.

Table 4:4:11: Model Fit Indices

| Criteria | Assessment | P. Values | Supported |
|---|---|---|---|
| Average path coefficient APC | 0.214 | P<0.001 | Supported |
| Average R-squared ARS | 0.373 | P<0.001 | |
| Average adjusted R-squared AARS | 0.368 | P<0.001 | |
| Average block VIF - AVIF | 1.680 | acceptable if <= 5, ideally <= 3.3 | |
| Average full collinearity VIF AFVIF | 2.151 | acceptable if <= 5, ideally <= 3.3 | |
| Tenenhaus GOF | 0.476 | Large >= 0.36 | |
| Sympson's paradox ration SPR | 0.917 | acceptable if <=0.7, ideally <= 1 | |
| R-squared contribution ration | 0.999 | acceptable if <= 9, ideally <= 1 | |
| Statistical suppression ratio SSR | 1.000 | acceptable if <=0.7 | |
| Nonlinear bivariate causality direction ratio | 1.000 | acceptable if <=0.7 | |

### 4.1.3 Results Overview

The results of the SEM analysis are shown in Figure 4.1. Each hypothesis refers to a link in the model while links refer to variable-pair relationships. The latent variables are represented by oval shapes while the manifest variables are represented by a square. Beta coefficients, standardised partial regression coefficients, denote the strengths of the multivariate associations among variables in the model. The symbol "*" refers to beta coefficients with a significance level lower than 5 percent (P<0.05) the symbol "**" to P<0.01 and the symbol "***" to P<0.001. The symbol "NS" represents beta coefficients that were not statistically significant. R-squared coefficients, under

endogenous variables, show the percentage of variance explained by the variables that point to them in the model.

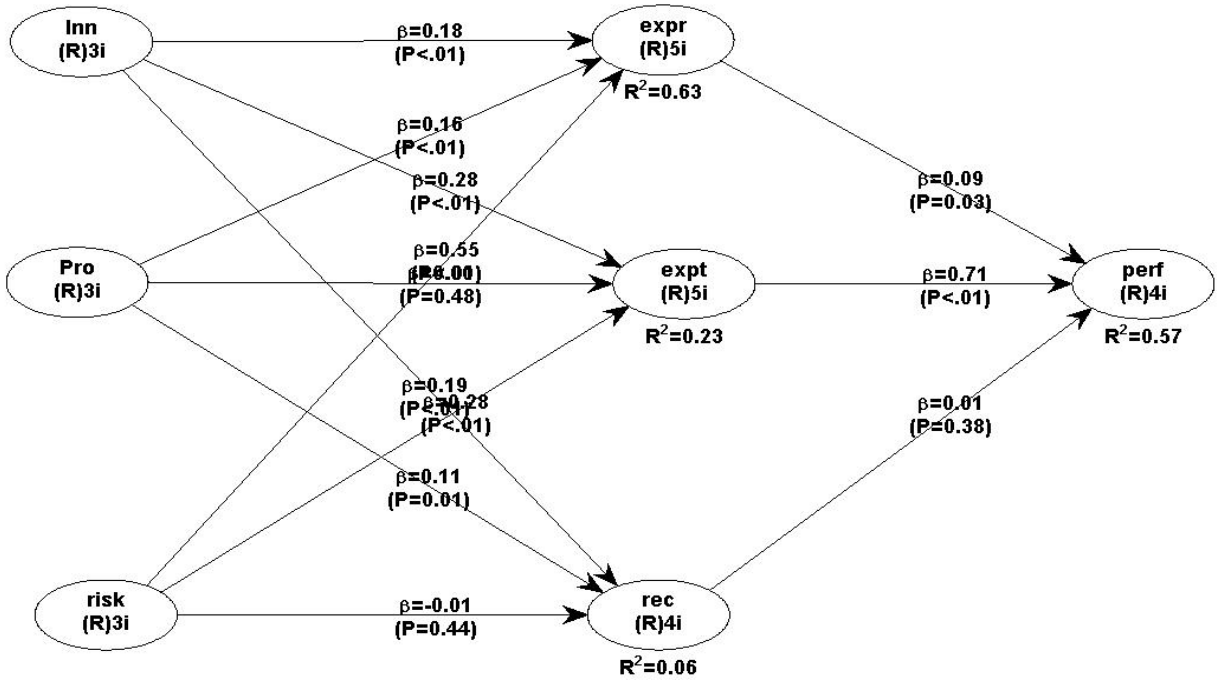


Figure 4-1: Estimated coefficient of the path analysis

The various hypotheses were tested using the structural model to identify how the constructs are related to each other. Table 4.12 summarises the standardised coefficients from the estimated structural model along with p-value. Also, a simplified structural model where the measured variables and the error variance terms are omitted from the diagram for simplicity, are depicted in Figure 4.1

Table 4:4:12: Structural model estimation results

| | **Relationships** | **Path Coefficient** | **P Value** | **Description** | **supported** |
|---|---|---|---|---|---|
| **1** | INN ⟶ EXP | 0.18 | <0.01 ** | Significant | Supported |
| **2** | INN ⟶ EXT | 0.28 | <0.01 ** | Significant | Supported |

| | | | | | |
|---|---|---|---|---|---|
| **3** | INN⟶ REC | 0.19 | <0.01 *** | Significant | Supported |
| **4** | PRO ⟶ EXP | 0.16 | <0.01 ** | Significant | Supported |
| **5** | PRO ⟶ EXT | 0.00 | <0.48 | Non-significant | Not Supported |
| **6** | PRO ⟶ REC | 0.11 | <0.01 ** | Significant | Supported |
| **7** | RSK ⟶ EXP | 0.55 | <0.001 | Significant | Supported |
| **8** | RSK ⟶ EXT | 0.28 | <0.01 | Significant | Supported |
| **9** | RSK ⟶ REC | 0.01 | 0.44 | Non-significant | Not Supported |
| **10** | EXP ⟶ PER | 0.09 | <0.03 | Significant | Supported |
| **11** | EXT ⟶ PER | 0.71 | <0.01 | Significant | Supported |
| **12** | REC ⟶ PER | 0.01 | 0.38 | Non-significant | Not supported |

This study comprises 12 direct hypotheses to be tested and confirmed. Within this regard, INN had the highest positive impact on EXPT (standardised estimate = 0.28, P< 0.01), followed by REC (standardised estimate = 0.19, P< 0.01), EXP (standardised estimate = 0.18, P< 0.01). This means innovativeness has a positive effect on exploring capabilities, exploiting capabilities, reconfiguration capabilities, and firm performance (Standardised coefficient of 0.18, 28, 19 at p<0.01) and thus H1, H2, and H3 are supported.

The analysis of the data collected show that PRO has an impact on EXP (standardised estimate = 0.16, P< 0.01) and to REC with (standardised estimate = 0.11, P< 0.01). The

analysis of the data collected show that PRO has no impact on EXPT also no direct impact on performance. H4 and H6 receive support as the construct of proactiveness is positively related to exploring capabilities and reconfiguration capabilities (Standardised coefficient of 0.16, 0.11 at $p<0.001$,). H5 is not supported, as the construct of proactiveness doesn't affect exploiting capabilities.

Risk-taking analysis shows an impact on EXP (standardised estimate = 0.55, $P< 0.01$) and that Risk is one of the main factors affecting exploration capabilities while the data shows Risk has an impact on EXPT (standardised estimate = 0.28, $P< 0.01$) and finally Risk-taking's impact on reconfiguration capability was tested and rejected, as the hypothesis was not supported. This means Risk would be positively related to exploring capabilities and exploiting capabilities.

The analysis of the data show that hypotheses H10, H11 are supported as exploring capabilities and exploiting capabilities had significant influence on firm performance (Standardised coefficient of 0.09, 0.71 at $p<0.001$). Hypothesis H12 predicted that reconfiguration capabilities positively influence firm performance. This prediction was not supported in the study (Standardised coefficient of 0.01).

Table 4:13 Path coefficient

| | **Inn** | **Pro** | **Risk** | **Perf** |
|---|---|---|---|---|
| **Inn** | | | | |
| **Pro** | | | | |
| **Risk** | | | | |
| **Perf** | 0.246 | 0.097 | 0.152 | |

Table 4:14 P values

| | **Inn** | **Pro** | **Risk** | **Perf** |
|---|---|---|---|---|
| **Inn** | | | | |

| | | | | |
|---|---|---|---|---|
| **Pro** | | | | |
| **Risk** | | | | |
| **Perf** | 0.001 | 0.023 | <0.001 | |

Table 4:15: Effect Size and R-square

| | **Inn** | **Pro** | **Risk** | **Exp** | **Expt** | **Rec** | **Perf** |
|---|---|---|---|---|---|---|---|
| **Expr** | 0.103 Moderate | 0.103 Moderate | 0.422 Strong | | | | |
| **Expt** | 0.117 Moderate | 0.001 Weak | 0.115 Moderate | | | | |
| **Rec** | 0.042 Strong | 0.020 Moderate | 0.001 Weak | | | | |
| **Perf** | | | | 0.035 Strong | 0.529 Strong | 0.005 Weak | |

Values that are 0.02, 0.15, and 0.35 are viewed as indicating that an independent latent variable has a low, moderate or strong effect at the structural level (Roldán and Sanchez-Franco, 2012). Values below 0.02 indicate that the effect is too weak to be regarded as relevant from a practical point of view, even when the corresponding P-values are statistically significant; this situation may occur with large sample sizes. Table 5.10 provides a summary of the effect size results. Furthermore, the analysis of the data collected shows that the effect size of INN and PRO on EXP is moderate ($f^2$=0.103), while the effect size of the path coefficient from RISK to EXP is Strong ($f^2$=0.422). These three independent variables, INN, PRO, RISK are moderately explanatory of the relationship with an $R^2$=0.63. The data also show that the effect size of INN and RISK on EXPT is moderate ($f^2$=0.117 and 0.115),while the effect size of

the path coefficient from PRO to EXPT is weak ($f^2$=0.001.) These three independent variables, INN, PRO, Risk moderately explain the relationship with an $R^2$=0.23.

The data also show that the effect size of INN on REC is weak ($f^2$=0.042),while the effect size of the path coefficient from PRO to REC is weak ($f^2$=0.020). On the other hand, Risk has very low effect on REC ($f^2$=0.001). INN, PRO, Risk moderately explain the relationship with an $R^2$=0.06.

**Q-squared Coefficients Assessment**

Moreover, Q-squared coefficient is used to evaluate the predictive validity of the model's endogenous latent variable. In order to obtain acceptable predictive validity, a Q-squared coefficient should be above zero whilst a Q-squared coefficient of less than 0 means that the model is poor in predictive validity (Hair et al., 2010; Roldan and Sanchez-Franco, 2012; (Roldan & Sanchez-Franco , 2012). In this study, the Q-squared coefficients for all constructs were above zero. Therefore, the model contributed to support predictive validity.

*Table 4:4:16: Q-squared Coefficients Assessment*

| Construct | INN | PRO | RSK | EXP | EXT | REC | PER |
|---|---|---|---|---|---|---|---|
| **Value** | | | | 0.626 | 0.237 | 0.069 | 0.554 |
| | | | | Strong | Moderate | Small | Strong |

### 4.1.4 Mediation Test

A mediating variable is defined as a variable that explains the correlation between an independent variable (exogenous) and a dependent variable (endogenous) (Frazier et al., 2004). Hair et al. (2014) explain that a mediator provides information about an

established and significant direct relationship. Thus, a mediator illustrates the mechanism through which a direct relationship takes place (Frazier et al., 2004).

Mediation can be partial or full (complete). When the relationships between the dependent and independent variables are significant (as a direct correlation) and become insignificant upon the inclusion of the mediating variable (the indirect effect should remain significant), the mediation here is considered to be full. However, when the direct relationship remains significant upon the inclusion of the mediating variable, the mediation would be partial (Kock, 2013). According to Kock (2013) and Hair et al. (2014), assessing a mediating effect should be conducted based on the following steps.
(1) The determination of the direct relationship between the exogenous and endogenous variables without including the mediating factor. If this is significant, the researcher can continue to the second step.
(2) The inclusion of the mediating variable in the relationship. If the indirect effect is significant and the direct effect remains significant, too, one can conclude that a partial mediation has taken place. Nonetheless, if the indirect effect is significant and the direct effect becomes non-significant, then the researcher can conclude a full mediation. Last, if the indirect effect is non-significant, then one can conclude that there is no mediation effect.

To check the mediating influence of the variables on firm performance through exploring capabilities, exploiting capabilities, and reconfiguration capabilities, three separate analyses were performed. The results revealed that all standardised, indirect (i.e. mediated by exploring capabilities, exploiting capabilities, and reconfiguration capabilities) effects on satisfaction are significant (see table 4.10). The partial mediation model was supported. These findings are consistent with the path analysis results. Also, a Sobel test has been conducted. The results also supported the mediating effects of

exploring capabilities, exploiting capabilities, and reconfiguration capabilities ($p < 0.001$).

Table 4:4:17: Indirect effects results

| Variables | Path coefficient | P-value | Mediation effect |
|---|---|---|---|
| Innovativeness via exploration on performance | p = 0.01 | <0.001 | Partial Mediator |
| Innovativeness via exploitation on performance | p= 0.08 | <0.001 | Full Mediator |
| Innovativeness via reconfiguration on performance | p = 0.01 | 0.023 | Partial Mediator |
| Proactiveness via exploration on performance | p=0.04 | <0.001 | Partial Mediator |
| Proactiveness via exploitation on performance | p = 0.14 | <0.001 | Full Mediator |
| Proactiveness via reconfiguration on performance | p= 0.01 | 0.039 | Partial Mediator |
| Risk via exploration on performance | p = 0.01 | <0.001 | Partial Mediator |
| Risk via exploitation on performance | p = 0.10 | <0.001 | Full Mediator |
| Risk via reconfiguration on performance | p = 0.01 | 0.070 | Full Mediator |

The table illustrates that the path coefficient of the direct relation from INN to PER is positive and significant ($\beta=0.39$, $P<0.01$). The path coefficient from INN explains the performance achieved by $R^2=0.15$. The path coefficient of the direct relationship between INN and EXP is significant with ($\beta=0.56$, $P<0.01$) and the path coefficient for the direct relationship between EXP and PER is significant with ($\beta=0.25$, $P<0.01$). Thus, EXP has a partial mediation effect between INN and PER with $R^2=0.20$. The relation between INN and EXPT is positive and significant ($\beta=0.42$, $P<0.01$), and the direct relation between EXT and PER resulted with path coefficient is significant ($\beta=0.74$, $P<0.01$). Lastly, the relation between INN was significant with REC by ($\beta=0.23$, $P<0.01$), and the direct relation between REC and PER is significant ($\beta=0.36$, $P<0.01$).

The figure illustrates that the path coefficient of the direct relation from PRO to PER is positive and significant ($\beta=0.30$, $P<0.01$). The path coefficient from PRO explains PER

achieved by $R^2$=0.09. The path coefficient of the direct relationship between PRO and EXP is significant (β=0.64, P<0.01) and the path coefficient for the direct relationship between EXP and PER is significant (β=0.39, P<0.01). Looking at the PRO and EXT relationship, it is positive (β=0.32, P<0.01) and between EXT and PERF is significant (β=0.74, P<0.01). The path coefficient from EXT explains the performance achieved by $R^2$=0.55. The path coefficient of the direct relation from PRO to REC is positive (β=0.18, P<0.01) and between REC and PERF is positive (β=0.36, P<0.01).

The figure also illustrates that the path coefficient of the direct relation from RISK to EXPR is positive and significant (β=0.77, P<0.01). The path coefficient of the direct relationship between EXP and PERF is significant with (β=0.39, P<0.01), while the path coefficient of the direct relation between RISK and EXT is positive (β=0.42, P<0.01) and between EXT and PERF is significant (β=0.74, P<0.01). It is illustrated in the figure that the path coefficient of the direct relation from RISK to REC is positive and significant (β=0.15, P<0.01). The path coefficient of the direct relationship between REC and PERF is significant (β=0.36, P<0.01).

## 4.2 Discussion

### 4.2.1 Overview of the Study

The aim of this study was to explore the indirect influences of entrepreneurship dimensions on firm performance through exploring, exploiting, and reconfiguration capabilities in SMEs in the Saudi Arabian context. In the quest to gather relevant literature to support the study, it was observed that there are few theoretical and empirical studies that discuss the indirect effects of entrepreneurship dimensions on firm performance through exploring, exploiting, and reconfiguration capabilities of SMEs. Most previous studies in Saudi Arabia and across the globe focused more on the

relationship between entrepreneurship and financial performance metrics like improved profitability, enhanced customer patronage, positive stock market rating, reputation building, ease of access to bank loans, social security net / poverty reduction and other economic measurements of performance (Raimi et al., 2013; Raimi et al., 2014). However, this study relies on previous research which discuss the influence of entrepreneurship dimensions on firm performance.

The current study is therefore the first attempt (based on the literature reviewed and the knowledge of the author) to explore the indirect influence of entrepreneurship dimensions on firm performance through exploring capabilities, exploiting capabilities, and reconfiguration capabilities in SMEs in Saudi Arabia.

To the researcher's knowledge, these effects have not previously been empirically investigated in the context of Saudi Arabia, even though there have been studies on the relationship between a firm's RBV, entrepreneurial orientation and performance. This study complements existing studies, and the results suggest that it is not only the firm's entrepreneurial behaviour, but also its ability to create new asset configurations that have an effect on performance. The research findings thus provide empirical support for the dynamic capability view of the firm, which emphasises the ability to orchestrate change and organise efficiently so as to be able to take advantage of new opportunities (Teece et al., 1997).

The existing literature shows that researchers examine performance by analysing the entrepreneurial activities within firms and their relationship with firm performance (Zahra and Garvis, 2002; Lumpkin and Dess, 2001; Wiklund and Shepherd, 2005; Shirokova, et al., 2016). Entrepreneurially-oriented firms, especially small firms or new ventures, can have a better position in comparison with their competitors in the market

place, and can increase their performance more effectively (Zahra and Garvis, 2002; Lumpkin and Dess, 2001; Wiklund and Shepherd, 2005, Keh, Nguyen, and Ng, 2007).

Although many researchers have tended to focus on the direct relationship between entrepreneurship and firm performance in organisations, rather less attention has been paid to the indirect links.

This research seeks to gain an insight into what enables EO in SMEs in emerging economies. EO has attracted scholarly interest because it directs firms to recognize and exploit new opportunities (Ireland, Covin, and Kuratko 2009) through innovative and proactive behaviours (Dess, Lumpkin, and McGee 1999) that can revitalize and increase the innovativeness of existing organisations (Covin and Miles 2007; Ireland, Covin, and Kuratko 2009; Zahra, Jennings, and Kuratko 1999; Zhang, et al., 2016). EO is necessary for firms in turbulent, dynamic, or highly volatile environments, wherein strategic flexibility and innovativeness are needed to maintain competitive advantages and respond to environmental pressures (Bruton, Ahlstrom, and Obloj 2015; Yiu and Lau 2008). Emerging economies represent such a context but are characterised by competitive, market and institutional differences that condition the way that managers and employees make judgments about EO and how they perceive what conditions and actions are legitimate within their context (Ahlstrom and Bruton 2010; Hermelo and Vassolo 2010; Yiu and Lau 2008; Zhang, et al., 2016).

In pursuance of the research, two theories provided the required theoretical grounding: Resource Based View Theory (RBV) and Dynamic Capabilities (DC).

As previously discussed, the central premise of RBV addresses the fundamental question of why firms are different and how firms achieve and sustain competitive advantage by deploying their resources. Varying performance between firms is a result

of heterogeneity of assets (Neff, 2011) and focused on factors that cause these differences to prevail (Camison and Villar-Lopez, 2014). Further, Mokhtar and Wan Ismail (2012) argue that RBV explains a firm's ability to deliver sustainable competitive advantage when its resources are managed such that their outcomes cannot be imitated by competitors. This ultimately creates a competitive barrier (Santos-Vijande, 2012) by virtue of unique resources such as valuable, inimitable, non-tradable, and non-substitutable resources, as well as firm specific assets (Madhani et al., 2009).

### 4.2.2 The relationships

- **The direct impact of Entrepreneurship Dimensions (INN, PRO and RSK) on Dynamic Capabilities (RQ1):**

The findings indicate that entrepreneurship dimensions have a significant influence on exploring capabilities, exploiting capabilities, and reconfiguration capabilities. The importance of innovation as an advantage to a firm's survival, renewal and success has been acknowledged by both researchers (e.g. Hurley and Hult, 1998) and practitioners (The Economist, October 15, 2009). It has become increasingly significant nowadays given the particularly complex and competitive business environments firms act within (e.g. Özsomer and Genctürk, 2003; Wiklund and Sheperd, 2003, 2005). To cope with these environments and support the innovation process, it is critical to adopt a strategic posture such as the one reflected by EO (Atuahene-Gima and Ko, 2001; Zhou et al., 2005). The research followed the work of authors that argue that EO's dimensions, namely innovativeness, proactiveness and risk-taking, rather than being a single construct, vary independently (Covin et al., 2006; Lumpkin and Dess, 1996, 2001). As such, firms can show different combinations and intensity of these dimensions (Lyon et al., 2000; Richard et al., 2004). Unconventional practices promoted by such

dimensions create a favourable environment in which firms can develop dynamic capabilities and, thus, translate the strategic posture into performance (Newey and Zahra, 2009; Zhou and Li, 2010).

In addition, the mechanism through which the dimensions of EO influences new product advantage and performance in the SMEs context has received limited research attention, which is surprising taking into account the increasing importance of EO for the viability and success of many firms (Hultman et al., 2009) and the high levels of dynamism and complexity of such markets (e.g. Samiee and Walters, 2006). Drawing on the dynamic capabilities framework and on RBV theories the researcher develops and tesst a model of EO dimensions–dynamic capabilities–performance in the context of SMEs in Saudi Arabia.

A strategic orientation reflects a philosophy on how to conduct business by encouraging appropriate behaviours (e.g. Baker and Sinkula, 2009; Gatignon and Xuereb, 1997; Zhou et al., 2005). Innovativeness, proactiveness and risk-taking as dimensions of EO have been acknowledged as relevant in the current business scene (The Economist, March 12, 2009). The study findings confirm this importance given that these strategic orientations can source both exploitative and explorative and reconfiguration capabilities. Even though all the dimensions of EO promote explorative, exploitative and reconfiguration capabilities,the study results show that innovativeness was at a higher level than the other two dimensions tested. This may be the reason why, out of all the dimensions that constitute an entrepreneurial posture, innovativeness is the one that has attracted more research attention over the years (e.g. Hurley and Hult, 1998; Olavarrieta and Friedmann, 2008; Siguaw et al., 2006; Theoharakis and Hooley, 2008). Proactiveness was not found to have a positive impact on exploitation capabilities and risk-taking was not found to have positive impact on reconfiguration capability.

The solution suggests the influence of EO dimensions on exploration, in that high innovativeness is a sufficient (although not necessary) condition for high exploration. The results also suggest that even a low risk-taking firm may also have high impact on explorative capabilities, as long as the firm simultaneously behaves in a proactive, forward-looking manner. Indeed, a forward-looking, proactive firm, which spots, anticipates, and acts in a timely fashion to respond to future market changes, may compensate for its low risk-taking behaviour and therefore develop explorative capabilities.

EO dimensions also influence exploitation, where innovativeness is a necessary but insufficient condition (as opposed to the finding for explorative capability). High levels of exploitative capabilities require the combination of innovation with a risk-taking posture. Proactiveness was found to not have a direct positive impact on exploitation capabilities.

This study hypotheses tested and confirmed that:

***H1:*** *There is a positive relationship between innovativeness and explorative capabilities;*

***H2:*** *There is a positive relationship between innovativeness and exploitative capabilities; and*

***H3:*** *There is a positive relationship between innovativeness and reconfiguration capabilities.*

#### *4.2.2.1 The direct effect of Innovativeness on exploration capability*

In respect to the influence of innovativeness on explorative capability, the findings showed that SMEs innovativeness had a positive and statistically significant effect on

exploration. This finding is consistent with other research which provided empirical evidence (e.g., Akcigit and Kerr, 2013; Nooteboom, 2000). For example, Yalcinkaya et al. (2007) demonstrated that innovation and exploration capabilities were related positively, as firms those interested in entrepreneurial processes will seek to build a positive relation between innovativeness and exploration. Perez-Bustamante (1999) has suggested that innovation is essential to exploration components. This implies that the innovation process is central to learning, with outcomes varying according to the phase in which the exploration activity is undertaken. This consideration supports the existence of an important relationship between innovation and exploration orientation (Hurley and Hult, 1998). Their study further highlights that higher levels of innovativeness in the organisational culture are linked with a greater capacity for adaptation. Wu, Chiang, and Jiang (2002) suggest that higher levels of organisational learning are driven by the level of innovativeness. Exploration and innovation are considered as the future platform for organisational success (Wang and Ahmed, 2002) and the basis for implementing strategic change in organisations (McGuinness and Morgan, 2005). A more recent study by Chen et al. (2009) indicates that searching and exploring and innovation have a relationship.

#### *4.2.2.2 The direct effect of Innovativeness on exploitation capability*

In respect to the influence of innovativeness on exploitation capability, the findings showed that SMEs innovativeness had a positive and statistically significant effect on exploitation. This finding is consistent with other research which provided empirical evidence (Koryak et al., 2018).

According to Atuahene-Gima, Slater, and Olson (2005), innovation drives exploitation activities in that the desire to fulfil customer needs leads to the introduction of new

products and services which entails exploitation_This thesis builds on the resource-based view of the firm as mentioned, which depicts firms as bundle of resources. The accumulation of innovation inside SMEs enhances their ability to exploit these opportunities. Innovation may lead to the creation of new resources that may require competencies that are not currently available in the firm (Atuahene-Gima and Ko, 2001; Kusumawardhani, 2013).

Moreover, firms are likely to develop new technical solutions and products, and are thereby likely to incur explorative capabilities (Brockman and Morgan, 2003). Given that innovativeness is a dimension of EO, it is logically consistent that the type of new knowledge generated by EO would be strategic in nature. Importantly, the argument that knowledge generation is a consequence of EO is consistent with the common observation in the entrepreneurship literature that entrepreneurship facilitates processes of experimentation (e.g., Atuahene-Gima and Ko, 2001; Zahra et al., 1999).

#### *4.2.2.3 The direct effect of Innovativeness on reconfiguration capability*

In respect of the influence of innovativeness on reconfiguration capability, the findings showed that SMEs innovativeness had a positive and statistically significant effect on reconfiguration. This finding is consistent with Cabrera-Suárez, Saá-Pérez and García-Almeida's(2001) argument about innovativeness' use of newly developed knowledge and technologies to shape and reconfigure a firm's future in terms of organisational processes, patterns and operations. As Perez-Bustamante (1999) suggested, innovation is important acquisition, processing, storage and recovery of information which entails reconfiguration.

On the basis of dynamic capability theory, the research concludes that an appropriate and timely development of reconfiguration capability will allow firms to move to the next stage of reconfiguration. Dynamic capabilities help organisations to adapt and are needed for facilitating the transformation from one stage to another. (Klievink and Janssen, 2009). Entrepreneurially oriented firms stimulate opportunities through their actions and innovation, and to best utilize such opportunities firms have to reconfigure their assets as innovativeness encourages experimentation in product development (Baker and Sinkula, 2009). Gloet and Samson (2016) stated that innovativeness is imbedded in all structures systems and strategies of organisations, thereby making reconfiguration as dynamic as the extent to which such organisations innovate. Ahrend (2014) argues that innovation and applying DCs have a direct relationship, that is:

**H4***:* Proactiveness positively influences explorative capabilities;

**H5:** Proactiveness positively influences exploitative capabilities; and

**H6:** Proactiveness positively influences reconfiguration capabilities.

The next section determines the direct effect of proactiveness on dynamic capabilities (EXP, EXT and REC)

#### *4.2.2.4 The direct effect of Proactiveness on exploration capability*

The findings show that SMEs proactiveness has a positive and statistically significant effect on exploration. This is supported by Atuahene-Gima and Ko (2001) and also Kusumawardhani (2013) when they emphasise that proactiveness leads to the creation of new resource combinations that may require competencies that are not currently available in the firm. With respect to the distinct effects of the proactiveness activities, this research results show that it is positively associated with exploration. (Skollmann

and Stöckmann, 2012). Proactivity is found to increase the firm's potential to support its existing capabilities by increasing the intensity of its activities. (Martin and Javalgi, 2016). Zhou (2007) researched young firms in China and concluded that three dimensions of entrepreneurial proclivity innovativeness, risk-seeking and proactiveness behaviour. That is, that proactiveness is especially influential, followed by innovativeness in exploring internationalization activity or exploiting it (Cavusgil and Knight, 2015). More specifically, proactivity and environment help an organisation to encourage learning. (Garcia-Morales, Llorens-Montes and Verdu-Jover, 2006).

#### *4.2.2.5 The direct effect of Proactiveness on exploitation capability*

The influence of proactiveness on exploitation capability showed that SMEs' proactiveness did not have a positive and statistically significant effect on exploitation. This is supported by Kollmann et al. (2009). Proactiveness, risk-taking and innovativeness dimensions only explain 45% of the variance in exploration capability and 11% of the variance in exploitation capability, which indicates the existence of an orientation–behavior gap, Moreover, the significant difference between exploration and exploitation with respect to the variance explained indicates a normative bias toward exploration in high EO firms (Dess and Lumpkin, 2005). With respect to the distinct effects of the EO dimensions, this result shows that all dimensions are positively associated with exploration, and that proactiveness additionally facilitates exploitation and this thesis concludes that facilitating does not necessary impact significantly on exploitation. A possible explanation might be the fact that proactiveness is associated with exploration and does not necessarily impact on exploitation since information requirements and applying can be based on exploration. Exploitation is often relatively uncomplicated and intuitive, and hence, the corresponding information and analysis

requirements might be low (Cardinal,2001), a matter which requires further in-depth analysis and research.

As proactiveness increases the company's awareness of customer needs and its receptiveness to market signals, a proactive company is more likely to be attuned to changes and progression in the competitive environment, enabling it to meet the need for adjustment ahead of the competition (Hamel and Prahalad, 1991). Proactiveness requires firms to take long-term gambles on expressed and latent market needs that may lead to highly successful or unsuccessful outcomes (Slater and Narver, 1998). The ability to acquire and synthesize external knowledge and assimilate it within the organisation is critical for proactive organisations seeking extraordinary and new solutions to address customers' latent needs (Hurley and Hult, 1998; Titus, Covin, and Slevin, 2011).

There is general agreement in the literature that SMEs and large firms possess fundamentally different resources and characteristics (Dean et al., 1998). Compared to their larger counterparts, SMEs are typically described as having a more limited resource base and fewer opportunities to reap the benefits of scale, scope and learning (Aldrich and Auster, 1986; Carson et al., 1995; Dean et al., 1998; Nooteboom, 1994). Although resource constraints can impose barriers to SMEs making significant investments in proactiveness, this research argues that such constraints may not be the determining factor. Recent research suggests that SMEs possess several distinctive organisational characteristics, such as better entrepreneurial alertness and simpler capital structures that can significantly promote organisational efficiency and flexibility (Jones, 2003; Yu, 2001), and innovativeness with which to respond with agility to their competitors' actions (Chen and Hambrick, 1995; Dean et al., 1998; Vossen, 1998).

These characteristics are held to contribute substantially to competitive advantage (e.g. Jenkins, 2009; Lepoutre and Heene, 2006).

#### *4.2.2.6 The direct effect of Proactiveness on reconfiguration capability*

The findings concerning the influence of proactiveness on reconfiguration capability showed that SMEs proactiveness had a positive and statistically significant effect on reconfiguration. This is consistent with Kachouie, Mavondo, and Sands' (2018) research which indicates a significant positive impact of proactive marketing capabilities. A superior proactive MO provides organisations with knowledge about the evolution of their industry sector. By implementing this knowledge, organisations discover potential opportunities and discover deficiencies in existing capabilities, thereby enabling them to better reconfigure their capabilities. As Garcia-Morales, Llorens-Montes and Verdu-Jover (2006) concluded, to nurture these dynamic capabilities requires proactive rather than reactive strategies, as the proactiveness encourages change in the organisation and its environment.

Numerous authors associated firms' entrepreneurship with the presence of the capability to transform and change by itself (Swieringa and Wierdsma, 1992). Because proactivity is geared toward modifying the environment and not simply adapting to it, it favours generative learning (learning that not only allows existing errors to be detected but also changes the values of the theory-in-use / strategies / assumptions). Proactiveness provides the firm with the potential to expand its reconfiguration capability, promoting its development and growth (Senge, 1990). Firms become proactive systems in that change comes from within the organisation itself, not from external environmental pressures. Therefore:

**H7***:* Risk taking is positively influence to explorative capabilities;

**H8:** Risk taking is positively influences exploitative capabilities; and

**H9***:* Risk taking is positively influences reconfiguration capabilities.

#### *4.2.2.7 There is a direct significant effect of risk taking on exploration capability*

With regard to the influence of risk- taking on exploration capability, the findings showed that SMEs' risk taking had a positive and statistically significant effect on exploration capability. Risk taking is one of the essences of entrepreneurship, as it is present at every stage of the entrepreneurial process (Lumpling and Dess, 1996). (Lisboa et al., 2011) In his argument, concluded that EO supports the firms to engage in explorative products and market expansion, while Lisboa et al., (2011) concluded that EO supports firms to engage in explorative products and market expansion. Taking the above into consideration, the study suggests that firms face uncertainty and risks that use different capabilities to enhance performance. (Martin and Javalgi, 2016). Accordingly, this study proposes that the link between risk taking as a dimension of EO and exploration as a part of the dynamic capabilities to determine how EO impact these capabilities.

#### *4.2.2.8 There is a direct significant effect of risk taking on exploitation capability*

The findings showed that SMEs' risk taking had a positive and statistically significant effect on exploitation capability. This is consistent with Liao (2003) who argued that firms that take risks in increasing their use of knowledge, through its acquisition and sharing, are better able to adopt exploitative capabilities as such knowledge widens their knowledge sharing and development at all levels of the firm. In supply chain research, it was argued that there is a negative relationship between risk and information

sharing as an exploitation capability (Arnold et al. 2010). This is supported by Lisboa, Skarmeas and Saridakis (2016) as high levels of product-development exploitative capabilities require the combination of innovation with either a proactive or a risk-taking posture.

#### *4.2.2.9 There is a direct significant effect of risk taking on reconfiguration capability*

The findings showed that SMEs' risk taking had no statistically significant effect on reconfiguration capability. This is contrary to what has been discussed in the conceptual framework based on Lisboa, Skarmeas and Saridakis' (2016) argument that even low risk-taking, which neither put risky investments into exploitation or exploration, has been found to reconfigure thereby attaining high product development. There it can be concluded that risk taking may have neither a positive nor a negative impact on reconfiguration.

A reason for such result could be the substantial differences between firms in their ability to implement new routines or techniques (Edmondson et al., 2001), since it is not only being active, but also being capable of orchestrating change (Teece et al., 1997) that matters. Therefore, firms with advanced reconfiguring capabilities are expected to be able to seize opportunities through new resource combinations and well-organised processes and structures.

#### *4.2.2.10 The impact of Dynamic Capabilities on firm performance.*

***H10:*** *There is a positive impact from explorative capabilities on firm performance.*

***H11:*** *There is a positive impact from exploitative capabilities on firm performance.*

***H12:*** *There is a positive impact from reconfiguration capabilities on firm performance.*

The findings of the current study indicate that exploring capabilities and exploitation capabilities have a significant relationship with firm performance. These results are in line with previous studies (e.g. Hitt et al., 2011; Ireland, Hitt, and Sirmon, 2003; March, 1991; Venkataraman and Sarasvathy, 2001; Zhang et al., 2016; Gary et al., 2017). It is therefore important to balance exploitation activities with exploration activities in order to enhance firm performance. The present study enhances the literature's understanding of the role and performance effects of exploration and exploitation in the context of SMEs in Saudi Arabia. To date, there are have been some studies that have investigated exploration and exploitation (Lubatkin et al. 2006; Fernhaber and Patel 2012; Patel et al. 2013; Voss and Voss, 2013; Abebe and Angriawan, 2014; Kimand Huh, 2015; Volery et al., 2015) but there are very few studies that have investigated this relationship in the context of SMEs in Saudi Arabia.

The results demonstrate that SMEs which have an entrepreneurially oriented focus on either exploration or exploitation achieve higher performance. In accordance with Ebben and Johnson (2005), the present study's results indicate that entrepreneurial firms are better off choosing the flexibility route or efficiency route or adapting the two. Entrepreneurial SMEs may lack sufficient resources, capabilities, and experience to manage competing demands to adopt exploration and exploitation.

Empirical research has recognised the need to explore to be different and the need to exploit to be more effective; indeed, reflecting on the findings provides contradictory prescriptions. On the one hand, managing concomitant choices between exploitation and exploration are suggested as central to enhancing performance (March, 1991). Furthermore, it can be argued that exploration capabilities directly influence firm performance. In a rapidly changing environment, SMEs should develop new

technologies and change their resource structure to adapt to new environmental opportunities (Karim and Mitchell, 2000) because existing organisational practices and routines may reduce a firm's flexibility to adapt to new changes (Levitt and March, 1988). Although exploration activities are inherently risky, they significantly increase performance levels of firms (Lewin, Long, and Carroll, 1999). In particular, when competitive forces are in play, a firm tends to continually introduce technologically superior products to maintain at least their current performance because competitive pressure often does not allow struggling firms to focus primarily on improvements of existing products. This is consistent with research by Garcia, Calan, Tone, and Levine (2003), who argue that firms can gain organisational capabilities by acquiring new knowledge through exploration capability, which fosters development and enhances the firm's performance. As such, the research argues that as an SME develops exploration capabilities, it engages in a series of innovative and creative activities that directly influence its performance. However, of special interest within the findings was the lack of significant influence of reconfiguration on firm performance, although the literature suggests that a greater degree of exploration and exploitation within a firm can increase performance. The lack of evidence for this relationship can be best understood within the intricate relationship between exploitation and exploration capabilities and reconfiguration. Although exploration capabilities ultimately drive firm performance, the development of reconfiguration capabilities does not.

#### *4.2.2.11 The mediating role of Dynamic Capabilities between EO and firm performance.*

**H 13-a** Exploration partially mediates the relationship between innovativeness and performances.

**H 13-b** Exploration partially mediates the relationship between proactiveness and performance.

**H 13-c** Exploration partially mediates the relationship between risk taking and performance.

**H14-a** Exploitation fully mediates the relationship between innovativeness and performance.

**H14-b** Exploitation fully mediates the relationship between proactiveness and performance.

**H14-c** Exploitation fully mediates the relationship between risk taking and performance.

**H15-a** Reconfiguration partially mediates the relationship between innovativeness and performance.

**H15-b** Reconfiguration partially mediates the relationship between proactiveness and performance.

**H15-c** Reconfiguration fully mediates the relationship between risk taking and performance.

RQ 3: How strong do dynamic capabilities: exploitative, explorative, reconfiguration capabilities mediate the relationship between EO and firm performance?

The key notion behind dynamic capabilities is a firm's ability to respond to external market changes efficiently and promptly (Teece et al., 1997), and an SME's ability to adjust its business processes quickly and efficiently to face environmental changes through the creation and delivery of superior customer value has long been suggested as an important driver of its financial performance (e.g., Day, 199). The research would

expect that the mediating role of DCs would be to positively influence SME performance.

The findings about the mediatory effect of innovation, proactiveness and risk taking and firm performance (H13 a-b-c), exploitation (H14 a-b-c) and reconfiguration (15 a-b-c) are consistent with literature that has so far found evidence that entrepreneurial orientation has a positive association with business performance (Wiklund and Shepherd, 2003, 2005; Zahra, 1991; Zahra and Covin, 1995). Some contributions have shown that exploration and exploitation positively influences organisational performance (Baker and Sinkula, 1999; Tippins and Sohi, 2003).

A partial mediatory effect of DC was found in the relationship between entrepreneurial orientation and business performance. The findings illustrate the importance of the sources of dynamic capabilities as a conduit in enhancing the relationship between entrepreneurial orientation and the performance of SMEs. This links well with the RBV of the firm which postulates that resources within the firm are associated with the firm's performance (Lin and Wu, 2014).

Theses hypotheses were presented in chapter 3. However, the result suggested that exploration capability partially mediates the relationship between innovation, proactiveness and risk taking as well as performance. This means that there is a significant indirect relationship between entrepreneurship orientation and firm performance which is in alignment with Wang's (2008) study which found that the EO-performance relationship was mediated by a firm's learning orientation.

Suliyanto and Rahab (2012) demonstrate that EO cannot directly improve the organisation's performance but rather that it must pass through other variables that may intervene to affect business performance.

This study applies RBV to assess the mediating effect of dynamic capabilities on improved performance. Analytical results demonstrate that VRIN resources can enhance firm performance. This finding regarding the relationship between performance and resources also supports the conclusions of previous studies (Grant, 1991; Ray et al., 2004; Wernerfelt, 1984). For the correlation of resources and dynamic capabilities, the analysis shows that entrepreneurship orientation positively affects the development of all three types (exploration, exploitation, and reconfiguration) of DC. As RBV suggests, the analytical results also indicate that VRIN resources can improve firm performance and strengthen the development of DC.

The analytical results indicate that DC significantly mediate VRIN resources to improve firm performance. A firm's performance can be improved by accumulating EO resources and developing dynamic capabilities to mediate resources. Consequently, the important role of EO resources is addressed because of their indirect effects on performance based on RBV and their indirect effects mediated by dynamic capabilities.

Among the three DC, dynamic exploitation capability has the most significant mediating effect, followed by reconfiguration then exploration. Therefore, for firms EO, it is crucial to develop dynamic capability by creating a mechanism to absorb information and knowledge through iterative business practices (Cohen and Levinthal, 1990). Exploration is also critical for improving firm competence (Fang and Zou, 2010; Mody, 1993). By combining RBV and DC, the analytical results of this study demonstrate an integrated consideration of both EO and dynamic capabilities. The performance advantages result not only from accumulation of EO, but also from the development of dynamic capabilities. The main question for firm managers thus becomes: what are the resources and what types of dynamic capabilities effectively

mediate them in performance? That is, strategic management should consider RBV and DCV in combination, instead of separately.

#### *4.2.2.12 EO Dimensions and Firm Performance*

Extant research has argued that the profit streams of corporations are under constant threat because of the general tendency in today's business toward shorter product and business model life cycles (Wiklund and Shepherd, 2005). In these circumstances, EO can boost firms' profitability by ensuring that they constantly seek new opportunities (Rauch et al., 2009), which enable them to create first-mover advantages, charge premium prices, and skim the top of the market ahead of their competitors (Stam and Elfring, 2008). Thus, firms with a strong EO create a substantial advantage and differentiation over their competition, facilitating both market share and profitability.
A strong degree of EO also brings new customers to the firm and helps it to retain existing customers by providing new products. EO helps firms obtain and use information about potential and existing customers from various channels, develop a strategic plan based on this information, and implement the plan in anticipation of emerging and unarticulated market trends ahead of their competition (Keh et al., 2007).

In order to address currently unknown customer needs, firms must engage in new exploration, support new ideas, experiment, and stimulate creativity, all of which are essential elements of EO (Covin et al., 2006). Entrepreneurial firms can seize business opportunities in the market proactively and obtain first-mover advantages by entering unexplored domains. Customers are often willing to pay premiums for innovations and improved products, especially when the competition does not provide similar offerings (Robinson and Min, 2002).

Despite entrepreneurial firms seeking to identify and seize opportunities in the marketplace (Slater and Narver, 1994), contemporary SME literature (Wiles et al., 2012) notes that the field lacks strong theoretical frameworks related to EO. In particular, Keupp and Gassmann (2011) argue that research in the field is largely phenomenological and studies capturing the EO of the firm are underrepresented. Consequently, this is a contradiction in the SME field; on the one hand, the EO of these firms is taken for granted, while on the other hand, studies that examine EO in SMEs are lacking.

The EO–performance literature is extensive, and with some tendency to regard that firms with more EO have superior performance (Wiklund and Shepherd, 2005; Zahra and Covin, 1995), although the empirical findings are not altogether consistent. Thus, conceptual arguments suggest that EO leads to higher performance. However, the magnitude of the relationship seems to vary across studies. While some studies have found that businesses that adopt a strong EO perform much better than firms that do not (Hult et al., 2003; Lee et al., 2001; Wiklund and Shepherd, 2003), other studies reported lower correlations between EO and performance (Dimitratos et al., 2004; Lumpkin and Dess, 2001; Zahra, 1991), or were even unable to find a significant relationship between EO and performance (George et al., 2001; Wiklund and Shepherd, 2005). Thus, the literature indicates a considerable variation in the reported relationships between EO and business performance.

Innovativeness is a primary element of EO that plays a pivotal role in boosting firm performance to differentiate an SME's products from those of its competitors. This concept may stimulate the capability of the firm to engage in product development and adjust production levels (Chang et al., 2007).

The current study showed a positive influence of EO on firm performance, which is consistent with prior studies (e.g. Lumpkin and Dess, 1996; Shepherd and Wiklund, 2005; Becherer and Maurer, 1997; Wiklund, 1999; Gary et al., 2017; Vishal et al., 2014).

Although EO is usually considered to have a positive impact on firm performance, this relationship requires a broader analysis of the intermediate steps between EO and firm performance. In this study, the researcher found that exploring capabilities, exploiting capabilities, and reconfiguration capabilities play a mediating role in the EO–firm performance relationship.

Results suggest that EO enhances exploring capabilities, exploiting capabilities, and reconfiguration capabilities, which in turn enhance firm performance. Exploring capabilities, exploiting capabilities, and reconfiguration capabilities act as a mediating variable between EO and firm performance. The findings make an important contribution to the recent extension of the EO–firm performance research stream focusing on the intermediate links between EO and firm performance (Rauch et al., 2009).

### 4.3 Summary

This chapter has discussed the research results in the light of findings from previous studies in order to examine the extent to which results are consistent. Most of these findings are in line with those found in previous studies. For example, EO has a positive effect on DCs which a facilitator is to mediate the relationships between EO and firm performance.

# 5 CHAPTER FIVE: CONCLUSION

The previous chapter integrated the findings of this study's quantitative data analyses and discussed the possible factors that may contribute to these findings. This chapter draws conclusions from the overall findings of the analyses in addressing the study's research questions. The chapter is organised as follows: Section 5.1 presents the research question conclusion; Section 5.2 outlines the main theoretical implications; Section 5.3 outlines the managerial implications; and Section 5.4 acknowledges the limitations of this study and makes recommendations for future research.

## 5.1 Research Questions conclusion

The overall aim of this research is to examine the indirect effect of EO (innovation, proactiveness and risk taking) on firm performance through the mediating role of DC (exploitative, explorative capabilities, and reconfiguration capabilities) in Saudi Arabian SMEs.

To achieve this aim, this research set out the following research objectives.

1. **To examine separately the relationship between innovativeness, proactiveness, risk-taking on dynamic capabilities.**

   To answer this objective, the research tests the EO three-dimensional effect on dynamic capabilities' three dimensions which are exploration, exploitation and reconfiguration.
2. **To investigate the direct influence of DC dimensions on firm performance.**

   This objective will be addressed by testing the direct impact of DC dimensions on firm performance.

3. **To examine the mediatory role of exploitative, explorative, reconfiguration capabilities on the relationship between EO and firm performance.**

This study aims to test DCs being a mediatory of the effect of EO on SMEs performance in Saudi Arabia.

A quantitative approach was applied in this research to achieve the best results in addressing the research questions. In addressing the first research question, this study has confirmed that a sample of Saudi SMEs demonstrated three EO dimensions that were identified in the literature. Of the hypotheses, three were rejected which were: H5; the impact of proactiveness on exploitation capability; H9; the impact of risk taking on the reconfiguration capability; and H12; the impact of reconfiguration capabilities on firm's performance. Interestingly, the same results were reported by several studies using SMEs as samples in other countries as mentioned in the previous chapter.

Some management theories, particularly entrepreneurship theory, that have been developed in the western world or developed countries may need to be adapted when applied in other cultures or emerging economies, such as Saudi Arabia.

## 5.2 Main Conclusions

The competitive landscape has changed drastically over the past decade. Globalisation of markets and technologies, higher customer expectations, intense competitive pressure and shorter cycle times are the characteristics of the business environment firms are facing nowadays (Brown and Eisenhardt, 1998; Menguc and Auh, 2010; Özsomer and Genctürk, 2003; Robson and Katsikeas, 2005). These conditions, along with the speed and intensity of market and technological alterations, enhance the importance of innovation for firm survival and growth (Hurley and Hult, 1998; Menguc and Auh, 2010). Innovations can be understood as "responses to environmental change or means of bringing about change in an organisation" (Damanpour and Evan, 1984, p.

393). Innovation is established as key to competitive advantage (e.g. Day and Wensley, 1988), to organisational renewal (Tushman, Anderson and O'Reilly, 1997) and to growth (e.g. Day, 1994; Peteraf, 1993). In this regard, EO, which is classified as being the "parent of innovation" (Meyers, 1986, p. 34), seems particularly relevant as a precursor of innovation and of performance (Atuahene-Gima and Ko, 2001; Zhou et al., 2005).

EO is a strategic orientation that reflects a firm's willingness to break away from the tried-and-true (Wiklund and Shepherd, 2003, 2005). It has been understood as a firm's inclination to engage in "the pursuit of new market opportunities and the renewal of existing areas of operation" (Hult and Ketchen, 2001, p. 901). It captures out-of-the-box decision-making practices, which facilitate firms' actions taken on the basis of early signals from the environment (Wiklund and Shepherd, 2003). Its spirit, comprised by innovativeness, proactiveness, and risk-taking (Covin and Slevin, 1989; Hughes and Morgan, 2007; Wiklund and Shepherd, 2003) is seen as the driving force behind the success of innovative firms, such as Apple, Google, Facebook and Amazon (The Economist, October 6, 2011). Nevertheless, there has been much debate in the literature about how this driving force acts. Some scholars argue that the different dimensions of EO should act in the same ways to affect performance and, thus EO is a unidimensional concept (Covin and Slevin, 1989; Knight, 1997; Raunch et al., 2009).

Others disagree, arguing that the dimensions of EO are distinct, may vary independently and occur in different combinations (Covin et al., 2006; Lumpkin and Dess, 1996, 2001).

Firms can exhibit high levels of one or more dimensions and relatively low levels of others (Lyon et al., 2000; Richard et al., 2004). In addition, the individual dimensions may not necessarily be valuable or even desirable at different points in time (Hughes

and Morgan, 2007; Lumpkin and Dess, 1996). It has been suggested that more than understanding the benefits of EO to the firm, it is important to examine the value of each EO dimension in obtaining superior performance (Hughes and Morgan, 2007).

Previous studies have suggested that both EO as well as its dimensions have positive implications for firm performance (e.g. Dess et al., 1997; Olavarrieta and Friedmann, 2008; Wiklund, 1999) and innovation performance (e.g. Theoharakis and Hooley, 2008; Zhou et al., 2005). Nevertheless, the results have been inconsistent (Chaston and Sadler-Smith, 2011; Rauch et al., 2009; Wiklund and Shepherd, 2005) and some studies have even failed to find significant relationships between EO's dimensions and performance outcomes (e.g. Avlonitis and Salavou, 2007; Lumpkin and Dess, 2001).

The existence of mixed results can better be understood in the light of the resource-based view of the firm (RBV). According to this theoretical perspective, it is unusual and difficult for competitors to be able to replicate resources vital to a firm's competitive advantage and performance (e.g. Barney, 1991; Ketchen et al., 2008; Newbert, 2007; Peteraf, 1993). In particular, a firm's strategic orientation, such as its innovativeness, its proactiveness or its risk-taking posture, is perceived as a vital strategic resource to drive performance (e.g. Gatignon and Xuereb, 1997; Noble et al., 2002).

Even though it is acknowledged that the resources that the firm possesses, and controls are important, they are not, per se, a source of competitive advantage (e.g. Hsu et al., 2008).

To be able to translate resources into advantage and performance, the firm needs idiosyncratic capabilities (e.g. Barney, 1991; Day and Wensley, 1988). Particularly, in rapidly changing markets, it is crucial to continuously develop, integrate, and reconfigure the firm's skills and abilities (e.g. Eisenhardt and Martin, 2000; Teece et

al., 1997) in order to adjust to or even change marketplaces (Griffith and Harvey, 2001; Song et al., 2005). Hence, firms are encouraged to develop DCs (e.g. McKelvie and Davidsson, 2009). Exploitation, exploration, and reconfiguration are three key organisational learning concepts which represent important dynamic capabilities (e.g. Yalcinkaya et al., 2007).

The researcher adopted a positivist philosophy with a deductive approach and quantitative method which were suitable for this study. The questionnaires were distributed to owners / managers of SMEs firms in Saudi Arabia. The questionnaire's items were measured on a Likert scale ranging from 1 "strongly disagree", to 5 "strongly agree". This study used PLS to test the research hypotheses. The measurement model has confirmed that the measure indicates accepted reliability and validity. Based on the research results, most of the hypotheses are accepted. The firm's innovativeness, proactiveness and risk-taking orientation reflects a favourable environment to develop capabilities and build competitiveness. Furthermore, dynamic capabilities are the internal value creating mechanisms that allow the entrepreneurial firm to gain competitive advantage and superior performance.

## 5.3 Contribution and implication

This thesis extends research on how EO interacts with firm-level capabilities to increase firm performance by arguing that dynamic capabilities play a central role in converting EO into improved performance. Dynamic capabilities are differentiated from "ordinary" resources and capabilities, as they allow the firm to reconfigure its existing resource and capability base (Eisenhardt and Martin, 2000, Teece et al., 1997).

### 5.3.1 Theoretical Implications

The three main points show how the findings of this study contribute to the literature of EO in SMEs.

- **Firstly**, the study provides empirical support for a comprehensive model of EO dimensions- DC-Performance. There has been much debate in the literature about how this driving force acts. Some scholars argue that the different dimensions of EO should relate similarly to performance and, thus EO is a unidimensional concept (Covin and Slevin, 1989; Knight, 1997; Raunch et al., 2009). Others disagree, stating that the dimensions of EO are distinct, may vary independently and occur in different combinations (Covin et al., 2006; Lumpkin and Dess, 1996, 2001). Firms can exhibit high levels of one or more dimensions and relatively low levels of other dimensions (Lyon et al., 2000; Richard et al., 2004). In addition, the individual dimensions may not necessarily be valuable or even desirable at different points in time (Hughes and Morgan, 2007; Lumpkin and Dess, 1996). It has been suggested that more than understanding the benefits of EO to the firm, it is important to examine the value of each EO dimension in obtaining superior performance (Hughes and Morgan, 2007). The current study examines separately innovativeness, proactiveness and risk-taking as antecedents of dynamic capabilities.

  The study findings confirm this importance given that these strategic orientations can source both exploitative and explorative capabilities. Even though all the dimensions of EO promote exploitative, explorative, and reconfiguration capabilities, the study results show that innovativeness was at a higher level than the other two dimensions tested. This may be the reason why, out of all the dimensions that constitute an entrepreneurial posture, innovativeness is the one that has attracted more research attention over the

years (e.g. Hurley and Hult, 1998; Olavarrieta and Friedmann, 2008; Siguaw et al., 2006; Theoharakis and Hooley, 2008).

- **Secondly**, the current study focuses on EO dimensions as antecedents to DCs (exploring capabilities, exploiting capabilities, and reconfiguration capabilities). In advancing this literature, the research posits that EO affects exploring capabilities, exploiting capabilities, and reconfiguration capabilities. The results related to the significant effect of the interaction between EO and DC indicate that even though EO may help firms to employ resources that facilitate the development of innovation, firms need to simultaneously establish EO that will support this orientation. In other words, if EO is to benefit the dynamic capabilities, firms need to find a way to efficiently use their resources. These findings provide new insights into the influence of EO dimensions on exploring capabilities, exploiting capabilities, and reconfiguration capabilities. The research also suggests that the relationship between EO and firm performance cannot simply be considered as a direct one, but it is also conditional or dependent on DCs. EO is a managerial attitude that must be supported by certain organisational conditions that facilitate learning and have positive implications for performance. DCs are a basic element of innovation, as the development of new ideas or concepts are considered to be essential to develop new products or processes. This study contributes to the literature on entrepreneurship by providing evidence of the importance of certain dynamic capabilities for EO to have an impact on firm performance. This managerial attitude requires certain organisational practices that catalyse its effects on organisations, specifically on firm performance. EO may have little direct effect on firm performance if dynamic capabilities are not facilitated. DCs have been

identified as a novel area of research in entrepreneurship; with the claim that much of their relevance for entrepreneurship lies in their effects on firm performance.

- **Thirdly**, this research contributes to the DCs literature by providing new insights into the mediating effects of dynamic capabilities on the relationship between EO and firm performance. Generally, while prior literature has focused on the identification of antecedents of dynamic capabilities (e.g., Gibson and Birkinshaw, 2004; Jansen et al., 2009) and called for research on outcomes of DCs (e.g., Voss and Voss, 2013), this research shows that DCs not only balance exploration, exploitation, and reconfiguration but are also a mechanism of dynamic capability through which organisational resources developed in localised practices (e.g., entrepreneurial orientations) can be integrated to enable firms to generate superior performance (Atuahene-Gima, 2005; O'Reilly and Tushman, 2008). Specifically, as discussed previously, while a body of research has established the EO-performance relationships, the EO (Phan, Wright, Ucbasaran, and Tan, 2009) research has a “black box” which calls for further understanding of the mechanisms underlying these relationships. In an attempt to open up this “black box”, these findings suggest that DCs enables a path dependent process, which is EO. This arrangement allows the firm to configure, renew and leverage their organisation's resources in a unique and inimitable way and, in turn, enhance their firm performance. In other words, although EO provides the impetus for generating resources which may deliver superior performance, firms cannot expect an immediate and direct benefit from such interaction. Instead, effective interactions between EO dimensions and DCs dimensions help firms to manage adaption of explorative and exploitative

activities over time. This enables firms to transform resources and subsequently generate an appropriate combination of exploration and exploitation, which in turn, can facilitate superior performance.

EO might be considered as an important determinant of firm performance. However, Rauch et al. (2009) highlighted that there is a considerable amount of variation when testing the EO–performance relationship. It is suggested that this important variation might be due to not taking into account intermediate links such as dynamic capabilities. The findings highlight the interplay between EO and DCs to demonstrate how performance is realized. The results show that the path from EO to dynamic capabilities enhances higher performance.

### 5.3.2 Implications for policy makers and managers.

This research could explain why some firms might manifest a low performance while their managers show a clear entrepreneurial orientation attitude. Specifically, this study explains this relationship by an indirect effect through DCs, whose magnitude is even greater than the direct effect.

From a practical perspective, this research has important implications for managers and policy makers.

- It suggests that firms pursuing explorative innovation, exploitative innovation, and reconfiguration should be aware of the relationship between EO dimensions and DCs. Traditionally, firms emphasise the importance of EO. This research's findings are a reminder to managers that EO is not enough to facilitate performance and that they need to investigate EO dimensions separately if the impetus for both explorative and exploitative activities is to be created. For example, firms may

investigate EO dimensions which might see explorative behaviours such as creativity and risk-taking encouraged through each EO dimension.

- Exploitative capability, on the other hand, which is focused on continuous improvement, is likely to be realized through initiatives that help employees understand the work operation in its entirety, such as job rotation and job enlargement. All these practices should be internally consistent with each other (Huselid, Jackson, and Schuler, 1997) and, additionally, they should not only enhance employees' capabilities (Boxall and Purcell, 2003), but they should also help align employees' attitudes with the firm's entrepreneurial orientation, and, in turn, cultivate both explorative and exploitative activities. An advancement brought by this study has to do with the role of EO dimensions in promoting explorative and exploitative capabilities. Conventionally, it is assumed that an entrepreneurial posture solely facilitates discovery-led activities (Politis, 2005).

- The firm's openness to new ideas, products or processes acts as a springboard to continuous adaptation to market changes with enhanced products. The proactive posture allows managers to be aware of market changes – even minor ones – and keep up with the market. Risk tolerance sets the scene to introduce new features and modifications in existing products. As such, this finding furthers our understanding of EO's role in management and provides useful insights to SMEs' managers. This finding is consistent with results in the literature that associate exploitation to efficiency obtained through making fewer mistakes and expediting decision making (Cyert and March, 1992). Explorative capabilities result in given its promotion of discovery and experimentation with new ideas. This finding is consistent with

previous literature that acknowledges explorative capabilities incentivising of the introduction of unique products (Yalcinkaya et al., 2007).

- This research suggests that managers should be aware that innovation capabilities themselves are a significant contributor to firm performance. Consequently, to enhance performance and to avoid focusing on one of the capabilities over the others, managers need to develop strategies which are focused on the three capabilities. When managers allocate resources to explorative, exploitative and reconfiguration activities they should be cognisant of the need to investigate EO dimensions and prioritise in order to develop value creating DCs (i.e., innovation) over time. This suggestion lends credence to prior work which suggests exploitative, explorative, and reconfiguration capabilities act as DCs to achieve superior performance.

- Although managers recognize the importance of entrepreneurship and EO, their implications for and demands on the rest of the organisation are often ignored in the process toward its success. This study suggests the implementation of a DCs approach when management has chosen to follow an EO. An initial management action could be to enhance the EO dimensions-dynamic capabilities interaction towards performance.

- The conclusions of this study suggest a series of recommendations aimed at the potential to improve performance. The first recommendation is to capitalise on the firm's DCs by recognising the importance of managers and their attitudes and stances in order to effectively implement the factors within organisations. This

question takes on an added importance because most managers do not view themselves as facilitators and they believe that they lack the required skills. These can be achieved by applying the attributes of DCs in such a way that learning becomes the main focus. With DCs configured as a key strategic resource, firms need to analyse other factors that might assist their development. EO and DCs are managerial attitudes that must be supported by certain organisational conditions that have positive implications for performance. The research proposes that EO, through DCs, will have a positive effect on business performance.

- The results of this study speak to an important set of firms' resources and capabilities ignored in the debate of the EO dimensions–performance paradigm in SMEs. This study fills a gap in an under-researched area of SMEs in the Gulf countries (Saudi Arabia). Thus, in the context of SMEs, EO dimensions and DCs have synergistic value-creating effects on performance. Therefore, EO dimensions and DCs are important causal mechanisms that help explain performance in SMEs in the Saudi Arabian context.

### 5.4 Limitations and future research suggestions

Although this study brings important implications for both researchers and managers, it is subject to limitations.

- Firstly, longitudinal studies of this study's constructs can offer further insights into the links among EO dimensions, exploitative, explorative, and reconfiguration capabilities, and firm performance.

- Secondly, from a content point of view, the research has focused on exploitative, explorative, and reconfiguration capabilities performance as intermediate links

between EO dimensions and firm performance. However, other organisational issues related to DCs, such as adaptive and generative learning interventions (Chiva, et al., 2010; Wang, 2008) could be incorporated into the conceptual model. Future research could examine the role of these concepts on the EO dimensions–performance relationship.

- Thirdly, other limitations are based on the methods have been used. As with all cross-sectional research, the relationship tested in this study represents a snapshot in time. Although it is likely that the conditions under which the data were collected will remain essentially the same, there are no guarantees that this will be the case. Furthermore, EO dimensions may have further implications on firm performance in the long term, but as this is not a longitudinal study, the research cannot evaluate its effects. Future longitudinal studies might assess EO dimensions outcomes in the long term.

- Fourth, the use of self-reported firm performance may be regarded as a further measurement limitation (Venkatraman, 1989). This choice was conditioned by the difficulties of obtaining objective performance data, which, in turn, can also be affected by accounting methods (Dechow, Sloan, and Sweeney 1995). Nevertheless, future and complementary research could improve these deficiencies by using objective firm performance data. However, further qualitative research would be useful to provide an in-depth picture of these relationships in a variety of cases within the sample. This could be useful to describe specific cases that do not follow the hypotheses of this study (e.g., those few firms that have high EO but low performance).

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# Appendix (1) Questionnaire in English version


## Entrepreneurial orientation, exploring, exploiting, reconfiguration capabilities and SMEs performance in Saudi Arabia

This survey is a part of a PhD research degree. It is looking at how SMEs managers as a capital can influence the company's ability to explore the existing financial support system and exploiting finance to achieve competitive advantage in the market. The questionnaire comprises three parts, the manager's/owner/employee's as a capital, the company's entrepreneurship and the manager's exploration, exploitation leading to the company's information of capabilities and achieving competitive advantage.

The questionnaire comprises four parts:

- Your background
- The company's entrepreneurship
- Manager's exploration, exploitation leading to the company's information of capabilities and achieving competitive advantage.
- Firm performance.

*Please note,*

You have been invited to participate in this study, being supported by Plymouth University. If you are interested in participating in the study, please honer us by reading the following information carefully. It is important for us to ensure the study and its procedures, are clear to you before you consent to proceed.
This survey is solely designed for adult participants. If you are under 18 years, PLEASE DO NOT ANSWER THIS SURVEY. Any participants who are 18 years old and over may take part in the survey.

All participants have the right to withdraw at any time, before they submit their data electronically at the end of the survey. All answers will be treated confidentially and respondents will remaining anonymous throughout the collection, storage and publication of the data and all subsequent research material. Responses will be collected online and stored in a secure database. Individual responses will be treated as confidential at all times and the data will be presented in such a way that your identity cannot be connected with any published data.

Once the survey has been taken offline, participant responses will be extracted and then statistically analysed. Results are likely to be published in a suitable academic conference and/or journal. In addition, these results will be used and published as part of a PhD thesis. If you would like to have a summary of the results, click on the question that will offer it on the survey.

*Thank you for your participation. If you have any queries, please do not hesitate to contact me;*

*Mohammed Fahad Albasri*
*Plymouth Business School*
*Plymouth, UK.*
*mohammed.albasri@plymouth.ac.uk*

| | |
|---|---|
| **Gender** | **Males** |
| | Females |
| **Education level** | Bachelor |
| | Diploma |
| | Master or PhD |
| | Other |
| **Company sector** | Industrial |
| | Service |
| | Marketing |
| **Age** | <25 |
| | 25<30 |
| | 31<40 |
| | 41<50 |
| | >50 |

| | strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|---|---|---|---|---|---|
| **Innovativeness** | | | | | |
| ***In general, the top managers of my business unit favour*** | | | | | |
| • ***A strong emphasis on RandD, technological leadership and innovation*** | | | | | |
| • ***Very many new lines of products or services*** | | | | | |
| • ***Changes in product or service lines have usually been quite dramatic*** | | | | | |
| **Reactiveness** | | | | | |
| • ***Typically initiates actions to which competitors then respond*** | | | | | |
| • ***Is very often the first business to, introduce new products/services, administrative techniques, operating technologies, etc .*** | | | | | |
| • ***Typically adopts a very competitive, "-competitors" posture*** | | | | | |
| **Risk-taking** | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| • ***In general, we have a strong proclivity for high-risk projects (with chances of very high returns)*** | | | | | |
| • ***In general, we believe that owing to the nature of the environment, bold, wide-ranging acts are necessary to achieve the firm's objectives*** | | | | | |
| • ***Typically adopts a bold, aggressive posture in order to maximize the probability of exploiting potential opportunities*** | | | | | |

| | strongly Disagree | Disagree | Natural | Agree | Strongly Agree |
|---|---|---|---|---|---|
| **Exploration** | | | | | |
| ***Over the last three years, to what extent has your firm*** | | | | | |
| • ***Acquired manufacturing technologies and skills entirely new to the firm? .*** | | | | | |
| • ***Learned product development skills and processes (such as product design, prototyping new products, timing of new product introductions, and customizing products for local markets) entirely new to the industry?*** | | | | | |
| • ***Acquired entirely new managerial and organisational skills that are important for innovation (such as forecasting technological and customer trends; identifying emerging markets and technologies; coordinating and integrating RandD; marketing, manufacturing, and other functions; managing the product development process)?*** | | | | | |
| • ***Learned new skills in areas such as funding new technology, staffing RandD function, training*** | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| ***and development of RandD, and engineering personnel for the first time?*** | | | | | |
| • ***Strengthened innovation skills in areas where it had no prior experience?*** | | | | | |
| **Exploitation** | | | | | |
| ***Over the last three years, to what extent has your firm*** | | | | | |
| • ***Upgraded current knowledge and skills for familiar products and technologies?*** | | | | | |
| • ***Invested in enhancing skills in exploiting mature technologies that improve productivity of current innovation operations?*** | | | | | |
| • ***Enhanced competencies in searching for solutions to customer problems that are near to existing solutions rather than completely new solutions?*** | | | | | |
| • ***Upgraded skills in product development processes in which the firm already possesses significant experience?*** | | | | | |
| • ***Strengthened our knowledge and skills for projects that improve efficiency of existing innovation activities?*** | | | | | |
| **Reconfiguring capabilities** | | | | | |
| | Never | Rarely | Sometimes | Very often | Always |
| • ***How often have you carried out the following activities between 2004 and 2008?*** | | | | | |
| • ***implementation of new or substantially changed company strategy*** | | | | | |
| • ***implementation of new kinds of management methods*** | | | | | |
| • ***new or substantially changed organisation structure*** | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| • ***new or substantially changed marketing method or strategy*** | | | | | |
| **Firm performance** | | | | | |
| | **strongly Disagree** | **Disagree** | **Natural** | **Agree** | **Strongly Agree** |
| • ***Return on Assets*** | | | | | |
| • ***Return on Sales*** | | | | | |
| • ***Market Share Growth*** | | | | | |
| • ***Sales Growth*** | | | | | |

# Appendix (2): Questionnaire in Arabic version



هذا الاستبيان جزء من بحث رسالة الدكتوراة، و يهدف بصفة أساسية إلى قياس تأثير مدراء/مالكات/موظفي المؤسسات المتوسطة والصغيرة، وكذلك تأثير ريادة الأعمال على أداء المؤسسة، على قدرة هؤلاء الأشخاص على الإطلاع وإستكشاف نظام الدعم المالي المخصص للمؤسسات ، و القدرة على الاستفادة المثلى من القروض ومن ثم أمكانية إعادة ترتيب إستراتيجيات المؤسسة من أجل الحصول على ميزة تنافسية في السوق.

:هذا الاستبيان يتضمن أربعة أجزاء

١-خلفية عامة عن الشخص الذي قام بتعبئة الإستبيان

٢- دور المدراء/المالكات/الموظفين كثروة بشرية للمؤسسة

٣- دور ريادة الأعمال في المؤسسة

٤- علاقة القدرة على البحث، والاستفادة المثلى من القروض بما يؤدي إلى إمكانية إعادة ترتيب إستراتيجيات المؤسسة والذي يؤدي للحصول على ميزة تنافسية داخل السوق

أشكرك جداً على مشاركتك في تعبئة هذا الإستبيان، وإن كان لديك أي إستفسار ، تفضل بإرساله على الإيميل التالي، وسيتم الرد عليك في أقرب فرصة

محمد فهد البسري
كلية الإدارة في جامعة بليموث, المملكة المتحدة
mohammed.albasri@plymouth.ac.uk

الموافقة: لقد تمت دعوتك عزيزي و عزيزتي للمشاركة في هذه الدراسة المُشرف عليها من قبل جامعة بليموث، فإذا أردت تعبئة
الإستبيان، جزاك الله خيراً، تفضل بقراءة المعلومات التالية بعناية

من المهم لي التأكد من أن الدراسة وإجراءاتها واضحة لك قبل البداية. فهذا الاستبيان يستهدف الشاركين الذين بلغوا من العمر 18 عام

أو أكثر. جميع المشاركين لديهم الحق بالإنسحاب في أي وقت، قبل أن يقوموا بإكمال الإستبيان إلكترونيًا، وسوف يتم التعامل مع كل الإجابات بسرية ، وان يتم طلب معلومات خاصة عن المشاركين إلا في حالة الرغبة في الحصول على نتيجة هذا البحث فقط. لذلك، المشاركين سيظلوا مجهولين الهوية خلال عملية جمع المعلومات، في كل من حفظ ونشر البيانات و مجمل مادة البحث العلمي.

سيتم جمع الاستبيانات عن طريق الانترنت ويتم تخزينها في قواعد بيانات بطريقة آمنة، وسيتم التعامل مع الإجابات الفردية بسرية في كل الأوقات و سيتم تقديم البيانات بطريقة لا تجعل هويتك عرضة للنشر. أي بيانات، و عندما تقوم بعمل الاستبيان على ورق، فسيتم إستخراج المشاركات و تحليلها إحصائيًا، وسيتم نشر النتائج في مؤتمر أكاديمي مناسب و/ أو مجلة علمية مناسبة، بالإضافة إلى ذلك، هذه النتائج سوف يتم استخدامها ونشرها كجزء من رسالة الدكتوراة، وإن أردت أن يكون لديك ملخص هذه النتائج، اضغط على طلب ذلك في نهاية الاستبيان.

○ الموافقة

الجنس؟

# Appendix (3): Ethical Approval for the study

RESEARCH WITH PLYMOUTH UNIVERSITY

Mohammed Albasri
PGR Student
Faculty of Business

Ref: FoB/UPC/FREC/FREC1415.20/clc
Date: 13 November, 2015

Dear Mohammed

**Ethical Approval Application No: FREC1415.20**
**Title: Entrepreneurial orientation and SMEs growth in Saudi Arabia: The role of financial support system exploration and exploitation.**

The members of the Faculty Research Ethics Committee would like to thank you for the time and effort you have put into addressing our queries on your application. We are now happy to approve the revised application and are now fully satisfied that the project complies with Plymouth University's ethical standards for research involving human participants. .

With reference to section 10 (d) of the revised application, we would recommend that data collected are safely stored up to a period of 10 years as stipulated by article 88 of the Plymouth University Research Ethics Policy (available at: http://www1.plymouth.ac.uk/research/ourresearch/Documents/Plymouth%20University%20Research%20Ethics%20Policy.pdf)

Approval is for the duration of the project. However, please resubmit your application to the committee if the information provided in the form alters or is likely to alter significantly.

We would like to wish you good luck with your research project.

Yours sincerely

*(Sent as email attachment)*

Dr James Benhin
Chair
**Faculty Research Ethics Committee**
**Faculty of Business**

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## Descriptive Statistics

| | N | Minimum | Maximum | Mean | Std. Deviation | Skewness | | Kurtosis | |
|---|---|---|---|---|---|---|---|---|---|
| | Statistic | Statistic | Statistic | Statistic | Statistic | Statistic | Std. Error | Statistic | Std. Error |
| Gender | 418 | 1 | 4 | 1.46 | .514 | .411 | .119 | -.657 | .238 |
| education | 418 | 1 | 4 | 1.51 | .717 | 1.302 | .119 | 1.187 | .238 |
| age | 418 | 1 | 5 | 3.03 | 1.057 | .019 | .119 | -.879 | .238 |
| sector | 418 | 1 | 12 | 3.90 | 2.510 | 1.213 | .119 | 1.431 | .238 |
| Q1.1 | 418 | 1 | 5 | 3.92 | 1.150 | -1.067 | .119 | .204 | .238 |
| Q1.2 | 418 | 1 | 5 | 3.93 | 1.151 | -1.131 | .119 | .442 | .238 |
| Q1.3 | 418 | 1 | 5 | 3.90 | 1.201 | -1.065 | .119 | .102 | .238 |
| Q2.1 | 418 | 1 | 5 | 4.02 | 1.141 | -1.220 | .119 | .688 | .238 |
| Q2.2 | 418 | 1 | 5 | 4.02 | 1.120 | -1.248 | .119 | .795 | .238 |
| Q2.3 | 418 | 1 | 5 | 4.03 | 1.129 | -1.342 | .119 | 1.039 | .238 |
| Q3.1 | 418 | 1 | 5 | 4.01 | 1.132 | -1.196 | .119 | .589 | .238 |
| Q3.2 | 418 | 1 | 5 | 4.08 | 1.066 | -1.348 | .119 | 1.180 | .238 |
| Q3.3 | 418 | 1 | 5 | 4.11 | 1.139 | -1.528 | .119 | 1.569 | .238 |
| Q4.1 | 418 | 1 | 5 | 4.00 | 1.195 | -1.285 | .119 | .697 | .238 |
| Q4.2 | 418 | 1 | 5 | 4.00 | 1.164 | -1.242 | .119 | .706 | .238 |
| Q4.3 | 418 | 1 | 5 | 3.92 | 1.197 | -1.125 | .119 | .288 | .238 |
| Q4.4 | 418 | 1 | 5 | 3.93 | 1.212 | -1.139 | .119 | .298 | .238 |
| Q4.5 | 418 | 1 | 5 | 4.01 | 1.134 | -1.289 | .119 | .922 | .238 |
| Q5.1 | 418 | 1 | 5 | 3.98 | 1.078 | -1.200 | .119 | .948 | .238 |
| Q5.2 | 418 | 1 | 5 | 4.02 | 1.093 | -1.180 | .119 | .634 | .238 |
| Q5.3 | 418 | 1 | 5 | 3.98 | 1.112 | -1.182 | .119 | .690 | .238 |
| Q5.4 | 418 | 1 | 5 | 4.05 | 1.066 | -1.306 | .119 | 1.204 | .238 |
| Q5.5 | 418 | 1 | 5 | 4.04 | 1.079 | -1.330 | .119 | 1.290 | .238 |
| Q6.1 | 418 | 1 | 5 | 4.00 | 1.074 | -1.174 | .119 | .678 | .238 |
| Q6.2 | 418 | 1 | 5 | 4.08 | 1.044 | -1.199 | .119 | .703 | .238 |
| Q6.3 | 418 | 1 | 5 | 4.11 | .967 | -1.283 | .119 | 1.406 | .238 |
| Q6.4 | 418 | 1 | 5 | 4.03 | 1.114 | -1.216 | .119 | .630 | .238 |
| Q7.1 | 418 | 1 | 5 | 4.09 | 1.009 | -1.450 | .119 | 2.066 | .238 |
| Q7.2 | 418 | 1 | 5 | 4.15 | .940 | -1.303 | .119 | 1.661 | .238 |
| Q7.3 | 418 | 1 | 5 | 4.14 | .954 | -1.376 | .119 | 1.963 | .238 |
| Q7.4 | 418 | 1 | 5 | 4.20 | .987 | -1.576 | .119 | 2.351 | .238 |
| Valid N (listwise) | 418 | | | | | | | | |

# Appendix (4) Descriptive analysis output of SPSS

**Total Variance Explained**

**Total Variance Explained**

| Component | Initial Eigenvalues | | | Extraction Sums of Squared Loadings | | |
|---|---|---|---|---|---|---|
| | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % |
| 1 | 8.378 | 31.029 | 31.029 | 8.378 | 31.029 | 31.029 |
| 2 | 3.279 | 12.144 | 43.173 | | | |
| 3 | 1.852 | 6.861 | 50.034 | | | |
| 4 | 1.167 | 4.323 | 54.357 | | | |
| 5 | 1.018 | 3.771 | 58.128 | | | |
| 6 | .929 | 3.442 | 61.570 | | | |
| 7 | .834 | 3.089 | 64.660 | | | |
| 8 | .747 | 2.766 | 67.426 | | | |
| 9 | .719 | 2.661 | 70.087 | | | |
| 10 | .663 | 2.454 | 72.541 | | | |
| 11 | .639 | 2.367 | 74.909 | | | |
| 12 | .613 | 2.270 | 77.179 | | | |
| 13 | .610 | 2.260 | 79.438 | | | |
| 14 | .536 | 1.986 | 81.425 | | | |
| 15 | .523 | 1.935 | 83.360 | | | |
| 16 | .514 | 1.903 | 85.263 | | | |
| 17 | .482 | 1.784 | 87.047 | | | |
| 18 | .458 | 1.696 | 88.743 | | | |
| 19 | .437 | 1.618 | 90.361 | | | |
| 20 | .413 | 1.531 | 91.892 | | | |
| 21 | .373 | 1.380 | 93.272 | | | |
| 22 | .362 | 1.342 | 94.614 | | | |
| 23 | .340 | 1.259 | 95.873 | | | |
| 24 | .328 | 1.215 | 97.088 | | | |
| 25 | .313 | 1.160 | 98.248 | | | |
| 26 | .270 | .999 | 99.247 | | | |
| 27 | .203 | .753 | 100.000 | | | |

Extraction Method: Principal Component Analysis.

# Appendix (5): Measurement and Structural model using PLS

## Model fit and quality indices

*Average path coefficient (APC) =0.214, P<0.001*

*Average R-squared (ARS) =0.373, P<0.001*

*Average adjusted R-squared (AARS) =0.368, P<0.001*

*Average block VIF (AVIF) =1.680, acceptable if <= 5, ideally <= 3.3*

## General model elements

*Missing data imputation algorithm: Arithmetic Mean Imputation*

*Outer model analysis algorithm: PLS Regression*

*Default inner model analysis algorithm: Warp3*

*Multiple inner model analysis algorithms used? No*

*Resampling method used in the analysis: Stable3*

*Number of data resamples used: 100*

*Number of cases (rows) in model data: 418*

*Number of latent variables in model: 7*

*Number of indicators used in model: 27*

*Number of iterations to obtain estimates: 7*

*Range restriction variable type: None*

*Range restriction variable: None*

*Range restriction variable min value: 0.000*

*Range restriction variable max value: 0.000*

*Only ranked data used in analysis? No*

## Path coefficients and P values

**Path coefficients**

| | *Inn* | *Pro* | *Risk* | *Expr* | *Expt* | *Rec* | *Rerf* |
|---|---|---|---|---|---|---|---|
| *Expr* | *0.185* | *0.160* | *0.550* | | | | |
| *Expt* | *0.280* | *0.002* | *0.277* | | | | |
| *Rec* | *0.185* | *0.109* | *-0.007* | | | | |
| *Perf* | | | | *0.091* | *0.712* | *0.015* | |

***P values***

| | *Inn* | *Pro* | *Risk* | *Expr* | *Expt* | *Rec* | *Rerf* |
|---|---|---|---|---|---|---|---|
| *Expr* | *<0.001* | *<0.001* | *<0.001* | | | | |
| *Expt* | *<0.001* | *0.484* | *<0.001* | | | | |
| *Rec* | *<0.001* | *0.012* | *0.441* | | | | |
| *Rerf* | | | | *0.030* | *<0.001* | *0.382* | |

## Standard errors for path coefficients

| | *Inn* | *Pro* | *Risk* | *Expr* | *Expt* | *Rec* | *Perf* |
|---|---|---|---|---|---|---|---|
| *Expr* | *0.048* | *0.048* | *0.045* | | | | |
| *Expt* | *0.047* | *0.049* | *0.047* | | | | |
| *Rec* | *0.048* | *0.048* | *0.049* | | | | |
| *Perf* | | | | *0.048* | *0.044* | *0.049* | |

## Effect sizes for path coefficients

| | *Inn* | *Pro* | *Risk* | *Expr* | *Expt* | *Rec* | *Perf* |
|---|---|---|---|---|---|---|---|
| *Expr* | *0.103* | *0.103* | *0.422* | | | | |
| *Expt* | *0.117* | *0.001* | *0.115* | | | | |
| *Rec* | *0.042* | *0.020* | *0.001* | | | | |
| *Perf* | | | | *0.035* | *0.529* | *0.005* | |

## Combined loadings and cross-loadings

| | Inn | Pro | risk | expr | expt | rec | perf | Type (a | SE | P value |
|---|---|---|---|---|---|---|---|---|---|---|
| Q1.1 | 0.805 | 0.017 | -0.219 | 0.123 | 0.000 | 0.008 | 0.048 | Reflect | 0.044 | <0.001 |
| Q1.2 | 0.816 | -0.076 | 0.021 | -0.164 | 0.062 | 0.059 | -0.054 | Reflect | 0.044 | <0.001 |
| Q1.3 | 0.754 | 0.065 | 0.212 | 0.046 | -0.067 | -0.072 | 0.007 | Reflect | 0.044 | <0.001 |
| Q2.1 | -0.018 | 0.808 | -0.039 | -0.032 | 0.039 | -0.026 | -0.048 | Reflect | 0.044 | <0.001 |
| Q2.2 | 0.032 | 0.805 | -0.100 | 0.047 | 0.007 | 0.059 | -0.032 | Reflect | 0.044 | <0.001 |
| Q2.3 | -0.014 | 0.823 | 0.136 | -0.015 | -0.046 | -0.032 | 0.078 | Reflect | 0.044 | <0.001 |
| Q3.1 | 0.035 | -0.099 | 0.804 | -0.178 | 0.031 | 0.053 | 0.019 | Reflect | 0.044 | <0.001 |
| Q3.2 | 0.010 | -0.007 | 0.820 | 0.002 | -0.004 | -0.030 | 0.010 | Reflect | 0.044 | <0.001 |
| Q3.3 | -0.044 | 0.104 | 0.822 | 0.172 | -0.026 | -0.022 | -0.028 | Reflect | 0.044 | <0.001 |
| Q4.1 | -0.003 | 0.024 | 0.225 | 0.737 | 0.132 | -0.015 | -0.059 | Reflect | 0.044 | <0.001 |
| Q4.2 | 0.037 | 0.106 | -0.180 | 0.774 | -0.061 | 0.019 | -0.033 | Reflect | 0.044 | <0.001 |
| Q4.3 | -0.074 | -0.061 | 0.264 | 0.735 | -0.022 | -0.014 | 0.059 | Reflect | 0.044 | <0.001 |
| Q4.4 | -0.055 | -0.098 | -0.076 | 0.774 | -0.004 | 0.032 | 0.032 | Reflect | 0.044 | <0.001 |
| Q4.5 | 0.087 | 0.026 | -0.199 | 0.814 | -0.038 | -0.022 | 0.001 | Reflect | 0.044 | <0.001 |
| Q5.1 | 0.149 | 0.012 | 0.019 | -0.116 | 0.709 | 0.088 | -0.483 | Reflect | 0.045 | <0.001 |
| Q5.2 | 0.139 | 0.114 | -0.098 | 0.004 | 0.734 | 0.057 | -0.252 | Reflect | 0.044 | <0.001 |
| Q5.3 | -0.003 | -0.078 | 0.159 | -0.131 | 0.704 | 0.022 | -0.396 | Reflect | 0.045 | <0.001 |
| Q5.4 | -0.115 | 0.007 | -0.171 | 0.183 | 0.728 | -0.075 | 0.552 | Reflect | 0.044 | <0.001 |
| Q5.5 | -0.161 | -0.056 | 0.094 | 0.051 | 0.752 | -0.087 | 0.539 | Reflect | 0.044 | <0.001 |
| Q6.1 | -0.074 | -0.099 | 0.130 | -0.047 | -0.113 | 0.807 | -0.006 | Reflect | 0.044 | <0.001 |
| Q6.2 | 0.048 | 0.037 | -0.225 | 0.156 | -0.033 | 0.710 | -0.052 | Reflect | 0.045 | <0.001 |
| Q6.3 | -0.160 | -0.025 | 0.072 | -0.021 | -0.075 | 0.736 | 0.017 | Reflect | 0.044 | <0.001 |
| Q6.4 | 0.225 | 0.114 | 0.003 | -0.091 | 0.267 | 0.636 | 0.046 | Reflect | 0.045 | <0.001 |
| Q7.1 | -0.087 | -0.076 | 0.025 | 0.035 | 0.208 | -0.157 | 0.825 | Reflect | 0.044 | <0.001 |
| Q7.2 | 0.050 | -0.070 | 0.069 | -0.000 | -0.040 | 0.063 | 0.789 | Reflect | 0.044 | <0.001 |
| Q7.3 | 0.003 | 0.119 | -0.150 | 0.069 | -0.057 | 0.003 | 0.815 | Reflect | 0.044 | <0.001 |
| Q7.4 | 0.037 | 0.026 | 0.058 | -0.106 | -0.117 | 0.096 | 0.800 | Reflect | 0.044 | <0.001 |

*Notes: Loadings are unrotated and cross-loadings are oblique-rotated. SEs and P values are for loadings. P values < 0.05 are desirable for reflective indicators*

## Pattern loadings and cross-loadings

| | *Inn* | *Pro* | *risk* | *expr* | *expt* | *rec* | *perf* |
|---|---|---|---|---|---|---|---|
| *Q1.1* | *0.835* | *0.017* | *-0.219* | *0.123* | *0.000* | *0.008* | *0.048* |
| *Q1.2* | *0.933* | *-0.076* | *0.021* | *-0.164* | *0.062* | *0.059* | *-0.054* |
| *Q1.3* | *0.595* | *0.065* | *0.212* | *0.046* | *-0.067* | *-0.072* | *0.007* |
| *Q2.1* | *-0.018* | *0.874* | *-0.039* | *-0.032* | *0.039* | *-0.026* | *-0.048* |
| *Q2.2* | *0.032* | *0.831* | *-0.100* | *0.047* | *0.007* | *0.059* | *-0.032* |
| *Q2.3* | *-0.014* | *0.733* | *0.136* | *-0.015* | *-0.046* | *-0.032* | *0.078* |
| *Q3.1* | *0.035* | *-0.099* | *0.982* | *-0.178* | *0.031* | *0.053* | *0.019* |
| *Q3.2* | *0.010* | *-0.007* | *0.818* | *0.002* | *-0.004* | *-0.030* | *0.010* |
| *Q3.3* | *-0.044* | *0.104* | *0.650* | *0.172* | *-0.026* | *-0.022* | *-0.028* |
| *Q4.1* | *-0.003* | *0.024* | *0.225* | *0.507* | *0.132* | *-0.015* | *-0.059* |
| *Q4.2* | *0.037* | *0.106* | *-0.180* | *0.867* | *-0.061* | *0.019* | *-0.033* |
| *Q4.3* | *-0.074* | *-0.061* | *0.264* | *0.589* | *-0.022* | *-0.014* | *0.059* |
| *Q4.4* | *-0.055* | *-0.098* | *-0.076* | *0.921* | *-0.004* | *0.032* | *0.032* |
| *Q4.5* | *0.087* | *0.026* | *-0.199* | *0.925* | *-0.038* | *-0.022* | *0.001* |
| *Q5.1* | *0.149* | *0.012* | *0.019* | *-0.116* | *1.002* | *0.088* | *-0.483* |
| *Q5.2* | *0.139* | *0.114* | *-0.098* | *0.004* | *0.836* | *0.057* | *-0.252* |
| *Q5.3* | *-0.003* | *-0.078* | *0.159* | *-0.131* | *1.017* | *0.022* | *-0.396* |
| *Q5.4* | *-0.115* | *0.007* | *-0.171* | *0.183* | *0.385* | *-0.075* | *0.552* |
| *Q5.5* | *-0.161* | *-0.056* | *0.094* | *0.051* | *0.415* | *-0.087* | *0.539* |
| *Q6.1* | *-0.074* | *-0.099* | *0.130* | *-0.047* | *-0.113* | *0.904* | *-0.006* |
| *Q6.2* | *0.048* | *0.037* | *-0.225* | *0.156* | *-0.033* | *0.733* | *-0.052* |
| *Q6.3* | *-0.160* | *-0.025* | *0.072* | *-0.021* | *-0.075* | *0.815* | *0.017* |
| *Q6.4* | *0.225* | *0.114* | *0.003* | *-0.091* | *0.267* | *0.396* | *0.046* |
| *Q7.1* | *-0.087* | *-0.076* | *0.025* | *0.035* | *0.208* | *-0.157* | *0.789* |
| *Q7.2* | *0.050* | *-0.070* | *0.069* | *-0.000* | *-0.040* | *0.063* | *0.764* |
| *Q7.3* | *0.003* | *0.119* | *-0.150* | *0.069* | *-0.057* | *0.003* | *0.833* |
| *Q7.4* | *0.037* | *0.026* | *0.058* | *-0.106* | *-0.117* | *0.096* | *0.843* |

*Note: Loadings and cross-loadings are oblique rotated.*

## Structure loadings and cross-loadings

| | *Inn* | *Pro* | *risk* | *expr* | *expt* | *rec* | *perf* |
|---|---|---|---|---|---|---|---|
| *Q1.1* | *0.805* | *0.339* | *0.382* | *0.440* | *0.327* | *0.197* | *0.319* |
| *Q1.2* | *0.816* | *0.291* | *0.369* | *0.359* | *0.331* | *0.222* | *0.282* |
| *Q1.3* | *0.754* | *0.462* | *0.544* | *0.526* | *0.265* | *0.083* | *0.260* |
| *Q2.1* | *0.336* | *0.808* | *0.526* | *0.456* | *0.218* | *0.093* | *0.180* |
| *Q2.2* | *0.385* | *0.805* | *0.530* | *0.488* | *0.261* | *0.166* | *0.208* |
| *Q2.3* | *0.390* | *0.823* | *0.609* | *0.521* | *0.261* | *0.097* | *0.262* |
| *Q3.1* | *0.443* | *0.514* | *0.804* | *0.567* | *0.363* | *0.155* | *0.310* |
| *Q3.2* | *0.445* | *0.560* | *0.820* | *0.619* | *0.313* | *0.080* | *0.276* |
| *Q3.3* | *0.436* | *0.598* | *0.822* | *0.659* | *0.286* | *0.085* | *0.239* |
| *Q4.1* | *0.438* | *0.497* | *0.627* | *0.737* | *0.363* | *0.155* | *0.294* |
| *Q4.2* | *0.432* | *0.481* | *0.558* | *0.774* | *0.255* | *0.127* | *0.227* |
| *Q4.3* | *0.390* | *0.455* | *0.601* | *0.735* | *0.301* | *0.109* | *0.292* |
| *Q4.4* | *0.400* | *0.408* | *0.545* | *0.774* | *0.319* | *0.162* | *0.287* |
| *Q4.5* | *0.465* | *0.471* | *0.570* | *0.814* | *0.285* | *0.121* | *0.269* |
| *Q5.1* | *0.313* | *0.210* | *0.261* | *0.242* | *0.709* | *0.424* | *0.331* |
| *Q5.2* | *0.352* | *0.284* | *0.318* | *0.325* | *0.734* | *0.417* | *0.428* |
| *Q5.3* | *0.229* | *0.166* | *0.250* | *0.222* | *0.704* | *0.381* | *0.363* |
| *Q5.4* | *0.253* | *0.205* | *0.260* | *0.314* | *0.728* | *0.310* | *0.685* |
| *Q5.5* | *0.266* | *0.234* | *0.333* | *0.328* | *0.752* | *0.307* | *0.705* |
| *Q6.1* | *0.084* | *0.041* | *0.044* | *0.069* | *0.324* | *0.807* | *0.187* |
| *Q6.2* | *0.146* | *0.075* | *0.036* | *0.117* | *0.314* | *0.710* | *0.180* |
| *Q6.3* | *0.044* | *0.045* | *0.028* | *0.052* | *0.310* | *0.736* | *0.188* |
| *Q6.4* | *0.385* | *0.293* | *0.301* | *0.302* | *0.552* | *0.636* | *0.424* |
| *Q7.1* | *0.270* | *0.187* | *0.277* | *0.289* | *0.636* | *0.217* | *0.825* |
| *Q7.2* | *0.320* | *0.211* | *0.286* | *0.304* | *0.548* | *0.292* | *0.789* |
| *Q7.3* | *0.291* | *0.252* | *0.266* | *0.300* | *0.534* | *0.248* | *0.815* |
| *Q7.4* | *0.293* | *0.214* | *0.259* | *0.256* | *0.530* | *0.300* | *0.800* |

*Note: Loadings and cross-loadings are unrotated.*

## Indicator weights

| | Inn WLS | Pro ES | risk | expr | expt | rec | perf | Type (a | SE | P value | VIF |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Q1.1 | 0.428 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | Reflect | 0.046 | <0.001 | |
| | 1.416 | 1 | 0.344 | | | | | | | | |
| Q1.2 | 0.433 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | Reflect | 0.046 | <0.001 | |
| | 1.444 | 1 | 0.353 | | | | | | | | |
| Q1.3 | 0.401 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | Reflect | 0.046 | <0.001 | |
| | 1.290 | 1 | 0.302 | | | | | | | | |
| Q2.1 | 0.000 | 0.408 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | Reflect | 0.046 | <0.001 | |
| | 1.462 | 1 | 0.330 | | | | | | | | |
| Q2.2 | 0.000 | 0.407 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | Reflect | 0.046 | <0.001 | |
| | 1.452 | 1 | 0.327 | | | | | | | | |
| Q2.3 | 0.000 | 0.416 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | Reflect | 0.046 | <0.001 | |
| | 1.514 | 1 | 0.342 | | | | | | | | |
| Q3.1 | 0.000 | 0.000 | 0.403 | 0.000 | 0.000 | 0.000 | 0.000 | Reflect | 0.046 | <0.001 | |
| | 1.456 | 1 | 0.324 | | | | | | | | |
| Q3.2 | 0.000 | 0.000 | 0.411 | 0.000 | 0.000 | 0.000 | 0.000 | Reflect | 0.046 | <0.001 | |
| | 1.514 | 1 | 0.337 | | | | | | | | |
| Q3.3 | 0.000 | 0.000 | 0.412 | 0.000 | 0.000 | 0.000 | 0.000 | Reflect | 0.046 | <0.001 | |
| | 1.518 | 1 | 0.338 | | | | | | | | |
| Q4.1 | 0.000 | 0.000 | 0.000 | 0.250 | 0.000 | 0.000 | 0.000 | Reflect | 0.047 | <0.001 | |
| | 1.536 | 1 | 0.185 | | | | | | | | |
| Q4.2 | 0.000 | 0.000 | 0.000 | 0.263 | 0.000 | 0.000 | 0.000 | Reflect | 0.047 | <0.001 | |
| | 1.678 | 1 | 0.203 | | | | | | | | |
| Q4.3 | 0.000 | 0.000 | 0.000 | 0.250 | 0.000 | 0.000 | 0.000 | Reflect | 0.047 | <0.001 | |
| | 1.542 | 1 | 0.183 | | | | | | | | |
| Q4.4 | 0.000 | 0.000 | 0.000 | 0.263 | 0.000 | 0.000 | 0.000 | Reflect | 0.047 | <0.001 | |
| | 1.665 | 1 | 0.204 | | | | | | | | |
| Q4.5 | 0.000 | 0.000 | 0.000 | 0.276 | 0.000 | 0.000 | 0.000 | Reflect | 0.047 | <0.001 | |
| | 1.895 | 1 | 0.225 | | | | | | | | |
| Q5.1 | 0.000 | 0.000 | 0.000 | 0.000 | 0.269 | 0.000 | 0.000 | Reflect | 0.047 | <0.001 | |
| | 1.497 | 1 | 0.191 | | | | | | | | |
| Q5.2 | 0.000 | 0.000 | 0.000 | 0.000 | 0.279 | 0.000 | 0.000 | Reflect | 0.047 | <0.001 | |
| | 1.491 | 1 | 0.205 | | | | | | | | |
| Q5.3 | 0.000 | 0.000 | 0.000 | 0.000 | 0.268 | 0.000 | 0.000 | Reflect | 0.047 | <0.001 | |
| | 1.530 | 1 | 0.188 | | | | | | | | |
| Q5.4 | 0.000 | 0.000 | 0.000 | 0.000 | 0.276 | 0.000 | 0.000 | Reflect | 0.047 | <0.001 | |
| | 1.897 | 1 | 0.201 | | | | | | | | |
| Q5.5 | 0.000 | 0.000 | 0.000 | 0.000 | 0.286 | 0.000 | 0.000 | Reflect | 0.047 | <0.001 | |
| | 1.931 | 1 | 0.215 | | | | | | | | |
| Q6.1 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.384 | 0.000 | Reflect | 0.046 | <0.001 | |
| | 1.532 | 1 | 0.310 | | | | | | | | |
| Q6.2 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.338 | 0.000 | Reflect | 0.047 | <0.001 | |
| | 1.283 | 1 | 0.240 | | | | | | | | |
| Q6.3 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.350 | 0.000 | Reflect | 0.047 | <0.001 | |
| | 1.376 | 1 | 0.258 | | | | | | | | |
| Q6.4 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.303 | 0.000 | Reflect | 0.047 | <0.001 | |
| | 1.195 | 1 | 0.192 | | | | | | | | |
| Q7.1 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.316 | Reflect | 0.047 | <0.001 | |
| | 1.811 | 1 | 0.261 | | | | | | | | |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| *Q7.2* | *0.000* | *0.000* | *0.000* | *0.000* | *0.000* | *0.000* | *0.303* | *Reflect* | *0.047* | *<0.001* |
| | *1.633* | *1* | *0.239* | | | | | | | |
| *Q7.3* | *0.000* | *0.000* | *0.000* | *0.000* | *0.000* | *0.000* | *0.313* | *Reflect* | *0.047* | *<0.001* |
| | *1.761* | *1* | *0.255* | | | | | | | |
| *Q7.4* | *0.000* | *0.000* | *0.000* | *0.000* | *0.000* | *0.000* | *0.307* | *Reflect* | *0.047* | *<0.001* |
| | *1.678* | *1* | *0.245* | | | | | | | |

*Notes: P values < 0.05 and VIFs < 2.5 are desirable for formative indicators; VIF = indicator variance inflation factor; WLS = indicator weight-loading sign (-1 = Simpson's paradox in l.v.); ES = indicator effect size.*

# Latent variable coefficients

***R-squared coefficients***

| *Inn* | *Pro* | *risk* | *expr* | *expt* | *rec* | *perf* |
|---|---|---|---|---|---|---|
| | | | *0.629* | *0.233* | *0.061* | *0.569* |

***Adjusted R-squared coefficients***

| *Inn* | *Pro* | *risk* | *expr* | *expt* | *rec* | *perf* |
|---|---|---|---|---|---|---|
| | | | *0.626* | *0.227* | *0.054* | *0.566* |

***Composite reliability coefficients***

| *Inn* | *Pro* | *risk* | *expr* | *expt* | *rec* | *perf* |
|---|---|---|---|---|---|---|
| *0.834* | *0.853* | *0.856* | *0.877* | *0.847* | *0.815* | *0.882* |

***Cronbach's alpha coefficients***

| *Inn* | *Pro* | *risk* | *expr* | *expt* | *rec* | *perf* |
|---|---|---|---|---|---|---|
| *0.702* | *0.742* | *0.748* | *0.825* | *0.775* | *0.696* | *0.822* |

***Average variances extracted***

| *Inn* | *Pro* | *risk* | *expr* | *expt* | *rec* | *perf* |
|---|---|---|---|---|---|---|
| *0.627* | *0.660* | *0.665* | *0.589* | *0.526* | *0.525* | *0.652* |

***Full collinearity VIFs***
*---*

| *Inn* | *Pro* | *risk* | *expr* | *expt* | *rec* | *perf* |
|---|---|---|---|---|---|---|
| *1.614* | *1.964* | *3.020* | *2.593* | *2.504* | *1.367* | *1.993* |

***Q-squared coefficients***
***---***

| *Inn* | *Pro* | *risk* | *expr* | *expt* | *rec* | *perf* |
|---|---|---|---|---|---|---|
| | | | *0.626* | *0.237* | *0.069* | *0.554* |

***Minimum and maximum values***
***---***

| *Inn* | *Pro* | *risk* | *expr* | *expt* | *rec* | *perf* |
|---|---|---|---|---|---|---|
| *-2.824* | *-3.294* | *-3.386* | *-3.287* | *-3.588* | *-3.426* | *-4.007* |
| *1.171* | *1.065* | *1.028* | *1.133* | *1.250* | *1.239* | *1.091* |

***Medians (top) and modes (bottom)***
**----------**

| *Inn* | *Pro* | *risk* | *expr* | *expt* | *rec* | *perf* |
|---|---|---|---|---|---|---|
| *0.423* | *0.339* | *0.286* | *0.294* | *0.245* | *0.284* | *0.144* |
| *0.799* | *0.697* | *0.642* | *0.681* | *0.495* | *0.519* | *0.450* |

## Correlations among l.vs. with sq. rts. of AVEs

---

| | *Inn* | *Pro* | *risk* | *expr* | *expt* | *rec* | *perf* |
|---|---|---|---|---|---|---|---|
| *Inn* | *0.792* | *0.456* | *0.541* | *0.555* | *0.390* | *0.214* | *0.363* |
| *Pro* | *0.456* | *0.812* | *0.684* | *0.602* | *0.304* | *0.146* | *0.267* |
| *Risk* | *0.541* | *0.684* | *0.816* | *0.755* | *0.393* | *0.130* | *0.337* |
| *Expr* | *0.555* | *0.602* | *0.755* | *0.767* | *0.396* | *0.176* | *0.356* |
| *Expt* | *0.390* | *0.304* | *0.393* | *0.396* | *0.726* | *0.506* | *0.697* |
| *Rec* | *0.214* | *0.146* | *0.130* | *0.176* | *0.506* | *0.725* | *0.327* |
| *perf* | *0.363* | *0.267* | *0.337* | *0.356* | *0.697* | *0.327* | *0.807* |

*Note: Square roots of average variances extracted (AVEs) shown on diagonal.*

## P values for correlations

**----------**

| | *Inn* | *Pro* | *risk* | *expr* | *expt* | *rec* | *perf* |
|---|---|---|---|---|---|---|---|
| *Inn* | *1.000* | *<0.001* | *<0.001* | *<0.001* | *<0.001* | *<0.001* | *<0.001* |
| *Pro* | *<0.001* | *1.000* | *<0.001* | *<0.001* | *<0.001* | *0.003* | *<0.001* |
| *risk* | *<0.001* | *<0.001* | *1.000* | *<0.001* | *<0.001* | *0.008* | *<0.001* |
| *expr* | *<0.001* | *<0.001* | *<0.001* | *1.000* | *<0.001* | *<0.001* | *<0.001* |
| *expt* | *<0.001* | *<0.001* | *<0.001* | *<0.001* | *1.000* | *<0.001* | *<0.001* |
| *rec* | *<0.001* | *0.003* | *0.008* | *<0.001* | *<0.001* | *1.000* | *<0.001* |
| *perf* | *<0.001* | *<0.001* | *<0.001* | *<0.001* | *<0.001* | *<0.001* | *1.000* |

***Correlations among l.v. error terms with VIFs***
---

| | *(e)expr* | *(e)expt* | *(e)rec* | *(e)perf* |
|---|---|---|---|---|
| *(e)expr* | *1.011* | *0.083* | *0.073* | *-0.049* |
| *(e)expt* | *0.083* | *1.300* | *0.478* | *0.000* |
| *(e)rec* | *0.073* | *0.478* | *1.299* | *-0.021* |
| *(e)perf* | *-0.049* | *0.000* | *-0.021* | *1.003* |

*Notes: Variance inflation factors (VIFs) shown on diagonal. Error terms included (a.k.a. residuals) are for endogenous l.vs.*

***P values for correlations***
---

| | *(e)expr* | *(e)expt* | *(e)rec* | *(e)perf* |
|---|---|---|---|---|
| *(e)expr* | *1.000* | *0.089* | *0.134* | *0.317* |
| *(e)expt* | *0.089* | *1.000* | *<0.001* | *0.992* |
| *(e)rec* | *0.134* | *<0.001* | *1.000* | *0.672* |
| *(e)perf* | *0.317* | *0.992* | *0.672* | *1.000* |

**********
**** Block variance inflation factors ****
**********

| | Inn | Pro | risk | expr | expt | rec | perf |
|---|---|---|---|---|---|---|---|
| expr | 1.447 | 2.148 | 2.433 | | | | |
| expt | 1.347 | 2.010 | 2.175 | | | | |
| rec | 1.331 | 1.422 | 1.614 | | | | |
| perf | | | | 1.226 | 1.632 | 1.371 | |

*Note: These VIFs are for the latent variables on each column (predictors), with reference to the latent variables on each row (criteria).*

## Indirect and total effects *

**********

***Indirect effects for paths with 2 segments***

---

| | Inn | Pro | risk | expr | Expt | rec | perf |
|---|---|---|---|---|---|---|---|
| Perf | 0.219 | 0.018 | 0.247 | | | | |

***Number of paths with 2 segments***

---

| | Inn | Pro | risk | expr | Expt | rec | perf |
|---|---|---|---|---|---|---|---|
| Perf | 3 | 3 | 3 | | | | |

***P values of indirect effects for paths with 2 segments***

---

| | Inn | Pro | risk | expr | expt | rec | perf |
|---|---|---|---|---|---|---|---|
| perf | <0.001 | 0.360 | <0.001 | | | | |

***Standard errors of indirect effects for paths with 2 segments***

---

| | Inn | Pro | risk | expr | expt | rec | perf |
|---|---|---|---|---|---|---|---|
| perf | 0.048 | 0.049 | 0.047 | | | | |

***Effect sizes of indirect effects for paths with 2 segments***

---

| | Inn | Pro | risk | expr | expt | rec | perf |
|---|---|---|---|---|---|---|---|
| perf | 0.079 | 0.005 | 0.083 | | | | |

***Sums of indirect effects***

---

| | Inn | Pro | risk | expr | expt | rec | perf |
|---|---|---|---|---|---|---|---|
| perf | 0.219 | 0.018 | 0.247 | | | | |

***Number of paths for indirect effects***

| | Inn | Pro | risk | expr | expt | rec | perf |
|---|---|---|---|---|---|---|---|
| perf | 3 | 3 | 3 | | | | |

***P values for sums of indirect effects***

| | Inn | Pro | risk | expr | expt | rec | perf |
|---|---|---|---|---|---|---|---|
| perf | <0.001 | 0.360 | <0.001 | | | | |

***Standard errors for sums of indirect effects***

| | Inn | Pro | risk | expr | expt | rec | perf |
|---|---|---|---|---|---|---|---|
| perf | 0.048 | 0.049 | 0.047 | | | | |

***Effect sizes for sums of indirect effects***

| | Inn | Pro | risk | expr | expt | rec | perf |
|---|---|---|---|---|---|---|---|
| perf | 0.079 | 0.005 | 0.083 | | | | |

***Total effects***

| | Inn | Pro | risk | expr | expt | rec | perf |
|---|---|---|---|---|---|---|---|
| expr | 0.185 | 0.160 | 0.550 | | | | |
| expt | 0.280 | 0.002 | 0.277 | | | | |
| rec | 0.185 | 0.109 | -0.007 | | | | |
| perf | 0.219 | 0.018 | 0.247 | 0.091 | 0.712 | 0.015 | |

***Number of paths for total effects***

| | Inn | Pro | risk | expr | expt | rec | perf |
|---|---|---|---|---|---|---|---|
| expr | 1 | 1 | 1 | | | | |
| expt | 1 | 1 | 1 | | | | |
| rec | 1 | 1 | 1 | | | | |
| perf | 3 | 3 | 3 | 1 | 1 | 1 | |

***P values for total effects***

| | Inn | Pro | risk | expr | expt | rec | perf |
|---|---|---|---|---|---|---|---|
| expr | <0.001 | <0.001 | <0.001 | | | | |
| expt | <0.001 | 0.484 | <0.001 | | | | |
| rec | <0.001 | 0.012 | 0.441 | | | | |
| perf | <0.001 | 0.360 | <0.001 | 0.030 | <0.001 | 0.382 | |

***Standard errors for total effects***

*----------*

| | Inn | Pro | risk | expr | expt | rec | perf |
|---|---|---|---|---|---|---|---|
| *expr* | *0.048* | *0.048* | *0.045* | | | | |
| *expt* | *0.047* | *0.049* | *0.047* | | | | |
| *rec* | *0.048* | *0.048* | *0.049* | | | | |
| *perf* | *0.048* | *0.049* | *0.047* | *0.048* | *0.044* | *0.049* | |

***Effect sizes for total effects***

*----------*

| | Inn | Pro | risk | expr | expt | rec | perf |
|---|---|---|---|---|---|---|---|
| *expr* | *0.103* | *0.103* | *0.422* | | | | |
| *expt* | *0.117* | *0.001* | *0.115* | | | | |
| *rec* | *0.042* | *0.020* | *0.001* | | | | |
| *perf* | *0.079* | *0.005* | *0.083* | *0.035* | *0.529* | *0.005* | |

**********

**** Causality assessment coefficients ****

**********

***Path-correlation signs***

*----------*

| | Inn | Pro | risk | expr | expt | rec | perf |
|---|---|---|---|---|---|---|---|
| *expr* | *1* | *1* | *1* | | | | |
| *expt* | *1* | *1* | *1* | | | | |
| *rec* | *1* | *1* | *-1* | | | | |
| *perf* | | | | *1* | *1* | *1* | |

*Notes: path-correlation signs; negative sign (i.e., -1) = Simpson's paradox.*

***R-squared contributions***

*----------*

| | Inn | Pro | risk | expr | expt | rec | perf |
|---|---|---|---|---|---|---|---|
| *expr* | *0.103* | *0.103* | *0.422* | | | | |
| *expt* | *0.117* | *0.001* | *0.115* | | | | |
| *rec* | *0.042* | *0.020* | *-0.001* | | | | |
| *perf* | | | | *0.035* | *0.529* | *0.005* | |

*Notes: R-squared contributions of predictor lat. vars.; columns = predictor lat. vars.; rows = criteria lat. vars.; negative sign = reduction in R-squared.*

***Path-correlation ratios***

*----------*

| | Inn | Pro | risk | expr | expt | rec | perf |
|---|---|---|---|---|---|---|---|
| *expr* | *0.330* | *0.249* | *0.716* | | | | |
| *expt* | *0.670* | *0.006* | *0.664* | | | | |
| *rec* | *0.812* | *0.608* | *0.047* | | | | |
| *perf* | | | | *0.234* | *0.959* | *0.040* | |

*Notes: absolute path-correlation ratios; ratio > 1 indicates statistical suppression; 1 < ratio <= 1.3: weak suppression; 1.3 < ratio <= 1.7: medium; 1.7 < ratio: strong.*

***Path-correlation differences***
***----------***

| | *Inn* | *Pro* | *risk* | *expr* | *expt* | *rec* | *perf* |
|---|---|---|---|---|---|---|---|
| *expr* | *0.375* | *0.484* | *0.218* | | | | |
| *expt* | *0.138* | *0.314* | *0.140* | | | | |
| *rec* | *0.043* | *0.071* | *0.162* | | | | |
| *perf* | | | | *0.298* | *0.031* | *0.350* | |

*Note: absolute path-correlation differences.*

***P values for path-correlation differences***
***----------***

| | *Inn* | *Pro* | *risk* | *expr* | *expt* | *rec* | *perf* |
|---|---|---|---|---|---|---|---|
| *expr* | *<0.001* | *<0.001* | *<0.001* | | | | |
| *expt* | *0.002* | *<0.001* | *0.002* | | | | |
| *rec* | *0.189* | *0.073* | *<0.001* | | | | |
| *perf* | | | | *<0.001* | *0.264* | *<0.001* | |

*Note: P values for absolute path-correlation differences.*

***Warp2 bivariate causal direction ratios***
***----------***

| | *Inn* | *Pro* | *risk* | *expr* | *expt* | *rec* | *perf* |
|---|---|---|---|---|---|---|---|
| *expr* | *0.999* | *0.971* | *1.017* | | | | |
| *expt* | *0.963* | *1.077* | *1.010* | | | | |
| *rec* | *0.992* | *0.930* | *1.158* | | | | |
| *perf* | | | | *1.013* | *0.984* | *1.040* | |

*Notes: Warp2 bivariate causal direction ratios; ratio > 1 supports reversed link; 1 < ratio <= 1.3: weak support; 1.3 < ratio <= 1.7: medium; 1.7 < ratio: strong.*

***Warp2 bivariate causal direction differences***
***----------***

| | *Inn* | *Pro* | *risk* | *expr* | *expt* | *rec* | *perf* |
|---|---|---|---|---|---|---|---|
| *expr* | *0.001* | *0.019* | *0.013* | | | | |
| *expt* | *0.016* | *0.024* | *0.004* | | | | |
| *rec* | *0.002* | *0.012* | *0.021* | | | | |
| *perf* | | | | *0.005* | *0.012* | *0.014* | |

*Note: absolute Warp2 bivariate causal direction differences.*

***P values for Warp2 bivariate causal direction differences***
***----------***

| | Inn | Pro | risk | expr | expt | rec | perf |
|---|---|---|---|---|---|---|---|
| *expr* | *0.493* | *0.351* | *0.394* | | | | |
| *expt* | *0.375* | *0.315* | *0.468* | | | | |
| *rec* | *0.486* | *0.405* | *0.336* | | | | |
| *perf* | | | | *0.461* | *0.407* | *0.388* | |

*Note: P values for absolute Warp2 bivariate causal direction differences.*

***Warp3 bivariate causal direction ratios***
***----------***

| | Inn | Pro | risk | expr | expt | rec | perf |
|---|---|---|---|---|---|---|---|
| *expr* | *1.001* | *0.964* | *1.005* | | | | |
| *expt* | *0.975* | *1.059* | *0.954* | | | | |
| *rec* | *0.947* | *0.876* | *0.993* | | | | |
| *perf* | | | | *1.001* | *0.985* | *1.043* | |

*Notes: Warp3 bivariate causal direction ratios; ratio > 1 supports reversed link; 1 < ratio <= 1.3: weak support; 1.3 < ratio <= 1.7: medium; 1.7 < ratio: strong.*

***Warp3 bivariate causal direction differences***
*----------*

| | Inn | Pro | risk | expr | expt | rec | per |
|---|---|---|---|---|---|---|---|
| *expr* | *0.001* | *0.023* | *0.004* | | | | |
| *expt* | *0.011* | *0.019* | *0.019* | | | | |
| *rec* | *0.012* | *0.022* | *0.001* | | | | |
| *perf* | | | | *0.000* | *0.011* | *0.016* | |

*Note: absolute Warp3 bivariate causal direction differences.*

***P values for Warp3 bivariate causal direction differences***
*----------*

| | Inn | Pro | risk | expr | expt | rec | perf |
|---|---|---|---|---|---|---|---|
| *Expr* | *0.494* | *0.317* | *0.467* | | | | |
| *Expt* | *0.414* | *0.350* | *0.346* | | | | |
| *Rec* | *0.402* | *0.323* | *0.491* | | | | |
| *perf* | | | | *0.497* | *0.407* | *0.374* | |

*Note: P values for absolute Warp3 bivariate causal direction differences.*